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FIG. 3

Report and transactions

Devonshire Association for the Advancement of Science, Literature
and Art, Devonshire Association for the Advancement of Science, ...

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Devonshire

REPORT AND TRANSACTIONS

OF THE

DEVONSHIRE ASSOCIATION

FOR

THE ADVANCEMENT OF SCIENCE, LITERATURE,
AND ART.

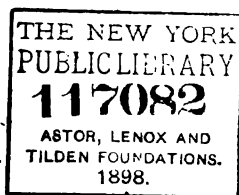
[TORRINGTON, JULY, 1875.]

VOL. VII.

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1875.

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The Editor is requested by the Council to make it known to the Public, that the Authors alone are responsible for the facts and opinions contained in their respective papers.

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OFFICERS.

1875-76.

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VIVIAN, E.
WHITLEY, N.
WORTH, R. N.

TABLE SHOWING THE PLACES AND TIMES OF MEETING OF THE DEVONSHIRE ASSOCIATION,

With the Officers, Number of Members, and Number of Papers read, from its commencement.

PLACES, TIMES, &c.	PRESIDENTS.	VICE-PRESIDENTS.	TREASURERS.*	SECRETARIES.*
EXETER— August 14th, 15th, 1862. 69 Members 5 Papers	Sir John Bowring, LL.D., F.R.S.	The Mayor of Exeter (W. Kendall, Esq.) Sir L. Falk, Bart., M.P. A. H. A. Hamilton, Esq. T. Shapter, Esq., M.D.	W. Vicary, Esq., F.G.S.	C. Spence Bate, Esq., F.R.S. Rev. W. Harpley, M.A. H. S. Ellis, Esq., F.R.A.S.
PLYMOUTH— July 29th, 30th, 1863. 80 Members 10 Papers	C. Spence Bate, Esq., F.R.S., F.L.S.	Sir John Bowring, LL.D., F.R.S. The Mayor of Plymouth (W. Derry, Esq.) Sir W. Snow Harris, F.R.S. J. L. Colley, Esq.	W. Vicary, Esq., F.G.S. J. Dabb, Esq.	Rev. W. Harpley, M.A. H. S. Ellis, Esq., F.R.A.S. J. B. Rowe, Esq., F.L.S.
TORQUAY— July 20th, 21st, 1864. 92 Members 15 Papers	E. Vivian, Esq., M.A.	C. Spence Bate, Esq., F.R.S., F.L.S. Chairman Torquay Local Board of Health (A. B. Sheppard, Esq.) Rev. R. H. Barnes, M.A. W. Pengelly, Esq., F.R.S., F.G.S.	W. Vicary, Esq., F.G.S.	Rev. W. Harpley, M.A. H. S. Ellis, Esq., F.R.A.S. E. Appleton, Esq.
TIVERTON— June 28th, 29th, 1865. 99 Members 14 Papers	C. G. B. Daubeney, M.D., LL.D., F.R.S., Professor of Botany, Oxford.	E. Vivian, Esq., M.A. The Mayor of Tiverton (W. N. Row, Esq.) C. A. W. Troyte, Esq.	E. Vivian, Esq., M.A. J. G. Dickenson, Esq.	Rev. W. Harpley, M.A. H. S. Ellis, Esq., F.R.A.S. Rev. J. B. Hughes, M.A.
TAVISTOCK— August 8th, 9th, 1866 132 Members 18 Papers	The Earl Russell, K.O., K.O.C., F.R.S., &c.	C. G. B. Daubeney, M.D., LL.D., F.R.S., &c. His Highness Rajah Brooke Sir J. Trelawny, Bart. J. Carpenter-Garnier, Esq. A. Russell, Esq., M.P. J. D. A. Samuda, Esq., M.P.	E. Vivian, Esq., M.A. E. Straker, Esq.	Rev. W. Harpley, M.A. H. S. Ellis, Esq., F.R.A.S. Rev. D. Griffith.
BARNSTAPLE— July 23rd to 25th, 1867. 145 Members 26 Papers	W. Pengelly, Esq., F.R.S., F.G.S.	The Earl Russell, K.O., K.O.C., F.R.S. The Mayor of Barnstaple (R. Farleigh, Esq.) The Earl Fortescue J. R. Chanter, Esq. J. Jerwood, Esq., M.A., F.G.S.	E. Vivian, Esq., M.A. T. W. M. W. Guppy, Esq.	Rev. W. Harpley, M.A. H. S. Ellis, Esq., F.R.A.S. R. W. Cotton, Esq.

HONITON— July 28th to 30th, 1868. 178 Members 23 Papers	J. D. Coleridge, Esq., q.c., M.A., M.P. W. Pongelly, Esq., F.R.S., F.G.S. The Mayor of Honiton (D. Gould, Esq.) Right Hon. Sir J. T. Coleridge Sir J. Kennaway, Bart. W. R. Bayley, Esq. A. B. Cochrane, Esq., M.P. J. Goldsmid, Esq., M.P. C. Gordon, Esq. G. Neumann, Esq. Rev. Preb. Mackerness, M.A. W. Porter, Esq.	E. Vivian, Esq., M.A. <i>E. Wathey, Esq.</i>	Rev. W. Harpley, M.A. Rev. R. Kircan, M.A. Rev. H. K. Lenn, M.A.
DARTMOUTH— July 20th to 22nd, 1869. 246 Members 23 Papers	G. P. Bidder, Esq., c.b. Sir J. D. Coleridge, q.c., M.A., M.P. Sir H. P. Seale, Bart. W. Froude, Esq., M.A. C. S. Hayne, Esq. G. F. Luttrell, Esq. A. Ridgway, Esq. Rev. J. Tracey, M.A.	E. Vivian, Esq., M.A. <i>F. Ash, Esq.</i>	Rev. W. Harpley, M.A. <i>P. Hockin, Esq.</i>
DEVONPORT— July 20th to 22nd, 1870. 275 Members 23 Papers	J. A. Froude, Esq., M.A. G. P. Bidder, Esq., c.b. The Mayor of Devonport (J. Rolston, Esq., M.D.) Vice-Adml. the Hon. J. R. Drummond, c.b. Rear-Admiral Stewart, c.b. G. Dansey, M.D. J. D. Lewis, Esq., M.P. J. May, Esq. A. Moore, Esq. I. C. Radford, Esq. J. W. W. Ryder, Esq. E. St. Aubyn, Esq. P. W. Swain, Esq. T. Woolcombe, Esq.	E. Vivian, Esq., M.A. <i>Rev. E. Roberts, M.A.</i>	Rev. W. Harpley, M.A. <i>G. T. Rolston, Esq.</i>

* Italics indicate Local officers.

TABLE SHOWING THE PLACES AND TIMES OF MEETING, ETC.—Continued.

PLACES, TIMES, &c.	PRESIDENTS.	VICE-PRESIDENTS.	TREASURERS.*	SECRETARIES.*
BIDEFORD— Aug. 16th to 17th, 1871. 283 Members 28 Papers	Rev. Canon C. Kingsley, M.A., F.L.S., F.G.S.	J. A. Froude, Esq., M.A. The Mayor of Bideford (J. How, Esq.) Rev. F. L. Bazeley J. R. Pine Coffin, Esq. Captain E. P. Charlewood, R.N. W. A. Deane, Esq. Rev. I. H. Gosset, M.A. General Sir E. Green Captain Moleworth, R.N. E. U. Vidal, Esq. N. Whitley, Esq. Captain Willett A. B. Wren, Esq.	E. Vivian, Esq., M.A. <i>R. Simpkins, Esq.</i>	Rev. W. Harpley, M.A. <i>J. A. Parry, Esq.</i>
EXETER— July 30 to Aug. 1, 1872. 294 Members 33 Papers	The Right Rev. Lord Bishop of Exeter	Rev. Canon C. Kingsley, M.A., F.L.S., F.G.S. The Mayor of Exeter (J. Harding, Esq.) The Sheriff (Horace G. Lloyd, Esq.) Sir L. Palk, Bart, M.P. Sir John Bowring, LL.D., F.R.S. Sir J. D. Coleridge, Q.C., M.A., M.P. E. A. Bowring, Esq., M.P. Rev. Precentor Cook, M.A. H. S. Ellis, Esq., F.R.A.S. Rev. Treasurer Hawker, M.A. J. Kennaway, Esq., M.P. E. Parfitt, Esq.	E. Vivian, Esq., M.A. <i>W. Cotton, Esq.</i>	Rev. W. Harpley, M.A. <i>Rev. R. Kirwan, M.A., F.S.A.</i> <i>G. W. Ormerod, Esq., M.A.,</i> <i>F.G.S.</i> <i>E. Parfitt, Esq.</i>

<p>Stidmouth— July 22nd to 24th, 1873. 330 Members 36 Papers</p>	<p>The Right Hon. S. Cave, M.A., M.P.</p>	<p>The Right Rev. Lord Bishop of Exeter The Right Hon. and Rev. The Earl of Buckinghamshire The Hon. and Rev. the Lord Sidney Godolphin Osborne Sir J. Floyd, Bart. Sir J. H. Kennaway, Bart., M.P. Rev. H. G. J. Clements, M.A. W. R. Coleridge, Esq. C. J. Cornish, Esq. P. O. Hutchinson, Esq. J. Ingleby Mackenzie, Esq., M.B. W. Radford, M.D. R. N. Thornton, Esq.</p>	<p>E. Vivian, Esq., M.A. <i>Captain Roe, M.N.</i></p>	<p>Rev. W. Harpley, M.A. <i>J. Ingleby Mackenzie, Esq., M.B.</i></p>
<p>Thornmouth— July 28th to 30th, 1874. 327 Members 33 Papers</p>	<p>The Right Hon. the Earl of Devon</p>	<p>The Right Hon. S. Cave, M.A., M.P. J. G. Beavan, Esq. The Right Hon. Lord Clifford R. M. Dunn, Esq. E. Gulson, Esq. Rev. Treasurer Hawker, M.A. Rev. W. Laidley, M.A. W. C. Lake, Esq., M.D. J. A. Magrath, Esq., M.D. G. W. Ormerod, Esq., M.A., F.G.S. J. Parson, Esq. T. V. Wollaston, Esq., M.A., F.L.L. H. B. T. Wrey, Esq.</p>	<p>E. Vivian, Esq., M.A. <i>J. Widdborne, Esq.</i></p>	<p>Rev. W. Harpley, M.A. <i>G. W. Ormerod, Esq., M.A., F.G.S.</i></p>

* Italics indicate Local officers.

TABLE SHOWING THE PLACES AND TIMES OF MEETING, ETC.—Continued.

PLACES, TIMES, &c.	PRESIDENTS.	VICE-PRESIDENTS.	TREASURERS.*	SECRETARIES.
<p>TOBRINGTON— July 27th to 29th, 1875. 356 Members 29 Papers</p>	<p>R. J. King, Esq., M.A.</p>	<p>The Right Hon. The Earl of Devon The Mayor of Torrington (T. Jackson, Esq.) Rev. S. Buckland, M.A. W. Cann, Esq. The Right Hon. Lord Clinton Rev. F. T. Colby, B.D., F.S.A. W. A. Deane, Esq. W. H. Gamlen, Esq. H. S. Gill, Esq. J. G. Johnson, Esq., M.P. W. H. Halliday, Esq., M.A. Dr. A. Kingdon Rev. C. E. Palmer, M.A. W. E. Price, Esq. Hon. Mark Rolle J. C. Moore-Stevens, Esq. R. L. Tapley, Esq.</p>	<p>E. Vivian, Esq., M.A. <i>M. R. Loveband, Esq.</i></p>	<p>Rev. W. Harpley, M.A. <i>Geo. Dox, Esq.</i></p>

* Italics indicate Local officers.

RULES.

1. THE Association shall be styled the Devonshire Association for the Advancement of Science, Literature, and Art.

2. The objects of the Association are—To give a stronger impulse and a more systematic direction to scientific enquiry in Devonshire; and to promote the intercourse of those who cultivate Science, Literature, or Art, in different parts of the county.

3. The Association shall consist of Members, Honorary Members, and Corresponding Members.

4. Every candidate for membership, on being nominated by a member to whom he is personally known, shall be admitted by the General Secretary, subject to the confirmation of the General Meeting of the Members.

5. Persons of eminence in Literature, Science, or Art, connected with the West of England, but not resident in Devonshire, may, at a General Meeting of the Members, be elected Honorary Members of the Association; and persons not resident in the country, who feel an interest in the Association, may be elected Corresponding Members.

6. Every *Member* shall pay an Annual Contribution of Ten Shillings, or a Life Composition of Five Pounds.

7. Ladies only shall be admitted as Associates to an Annual Meeting, and shall pay the sum of Five Shillings each.

8. Every *Member* shall be entitled gratuitously to a lady's ticket.

9. The Association shall meet annually, at such a time in July and at such place as shall be decided on at the previous Annual Meeting.

10. A President, two or more Vice-Presidents, a General Treasurer, one or more General Secretaries, and a Council, shall be elected at each Annual Meeting.

11. The President shall not be eligible for re-election.

12. Each Annual Meeting shall appoint a local Treasurer and Secretary, who, with power to add to their number any

Members of the Association, shall be a local Committee to assist in making such local arrangements as may be desirable.

13. In the intervals of the Annual Meetings, the affairs of the Association shall be managed by the Council; the General and Local Officers, and Officers elect, being *ex officio* Members.

14. The Council shall hold a meeting at Exeter in the month of January or February in each year, on such day as the Honorary Secretary shall appoint, for the due management of the affairs of the Association, and the performing the duties of their office.

15. The Honorary Secretary, or any four members of the Council, may call extraordinary meetings of their body, to be held at Exeter, for any purpose requiring their present determination, by notice under his or their hand or hands, addressed to every other member of the Council, at least ten clear days previously, specifying the purpose for which such extraordinary meeting is convened. No matter not so specified, and not incident thereto, shall be determined at any extraordinary meeting.

16. The General Treasurer and Secretaries, and the Council, shall enter on their respective offices at the meeting at which they are elected; but the President, Vice-Presidents, and Local Officers, not until the Annual Meeting next following.

17. All Members of the Council must be *Members* of the Association.

18. The Council shall have power to fill any Official vacancy which may occur in the intervals of the Annual Meetings.

19. The Annual Contributions shall be payable in advance, and shall be due in each year on the day of the Annual Meeting.

20. The Treasurer shall receive all sums of money due to the Association; he shall pay all accounts due by the Association after they shall have been examined and approved; and he shall report to each meeting of the Council the balance he has in hand, and the names of such members as shall be in arrear, with the sums due respectively by each.

21. Whenever a Member shall have been three months in arrear in the payment of his Annual Contributions, the Treasurer shall apply to him for the same.

22. Whenever, at an Annual Meeting, a Member shall be two years in arrear in the payment of his Annual Contributions, the Council may, at its discretion, erase his name from the list of members.

23. The General Secretaries shall, at least one month before each Annual Meeting, inform each member by circular of the place and date of the Meeting.

24. Members who do not, on or before the day of the Annual Meeting, give notice, in writing or personally, to one of the General Secretaries of their intention to withdraw from the Association, shall be regarded as members for the ensuing year.

25. The Association shall, within three months after each Annual Meeting, publish its transactions, including the Rules, a Financial Statement, a List of the Members, the Report of the Council, the President's address, and such papers, in abstract or *in extenso*, read at the Annual Meeting, as shall be decided by the Council.

26. The Association shall have the right at its discretion of printing *in extenso* in its Transactions all papers read at the Annual Meeting; but the copyright of a paper read before any meeting of the Association, and the Illustrations of the same which have been provided at his expense, shall remain the property of the Author.

27. The Authors of papers printed in the Transactions shall, within seven days after the Transactions are published, receive twenty-five private copies free of expense, and shall be allowed to have any further number printed at their own expense. All arrangements as to such extra copies to be made by the Authors with the printer to the Association.

28. If proofs of papers to be published in the Transactions be sent to Authors for correction, and are retained by them beyond four days for each sheet of proof, to be reckoned from the day marked thereon by the printer, but not including the time needful for transmission by post, such proofs shall be assumed to require no further correction.

29. Should the Author's corrections of the press in any paper published in the Transactions amount to a greater sum than in the proportion of twenty shillings per sheet, such excess shall be borne by the Author himself, and not by the Association.

30. Every *Member* shall, within three months after each Annual Meeting, receive gratuitously a copy of the Transactions.

31. The Accounts of the Association shall be audited annually, by Auditors appointed at each Annual Meeting, but who shall not be *ex officio* Members of the Council.

BYE-LAWS AND STANDING ORDERS.

1. IN the interests of the Association it is desirable that the President's Address in each year be printed previous to its delivery.

2. In the event of there being at an Annual Meeting more Papers than can be disposed of in one day, the reading of the residue shall be continued the day following.

3. The pagination of the Transactions shall be in Arabic numerals exclusively, and carried on consecutively, from the beginning to the end of each volume; and the Transactions of each year shall form a distinct and separate volume.

4. The Honorary Secretary shall bring to each Annual Meeting of the Members a report of the number of copies in stock of each 'Part' of the Transactions, with the price per copy of each 'Part' specified; and such report shall be printed in the Transactions next after the Treasurer's financial statement.

5. The Honorary Secretary shall prepare and bring to each Annual Meeting brief Obituary Notices of Members deceased during the previous year, and such notices shall be printed in the Transactions.

6. An amount not less than the sum of the Compositions of all existing Life-Members shall be kept at Interest in the names of the Treasurer and General Secretary.

7. The Secretary shall, within one month of the close of each Annual Meeting of the Association, send to each Member newly elected at the said Meeting a copy of the following letter:—

*Devonshire Association for the Advancement of Science, Literature,
and Art.*

SIR,—I have the pleasure of informing you that on the of
July, you were elected a member of the Association on the
nomination of

The copy of the Transactions for the current year, which will be

forwarded to you in due course, will contain the Laws of the Association. Meanwhile I beg to call your attention to the following statements :—

(1) Every Member pays an Annual Contribution of Ten Shillings, or a Life Composition of Five Pounds.

(2) The Annual Contributions are payable in advance, and are due in each year on the day of the Annual Meeting.

(3) Members who do not, on or before the day of the Annual Meeting, give notice in writing or personally to the General Secretary of their intention to withdraw from the Association are regarded as Members for the ensuing year.

The Treasurer's address is—EDWARD VIVIAN, Esq., Woodfield, Torquay.—I remain, Sir, your faithful Servant,

Hon. Sec.

8. The reading of any Paper shall not exceed twenty minutes, and in any discussion which may arise, no speaker shall be allowed to speak more than ten minutes.

9. Papers to be read to the Annual Meetings of the Association must be handed, together with all Drawings to be used in illustrating them in the Transactions of the Association, to the General Secretary at or before the first Meeting of the Council on the first day of the Annual Meeting; and all Rules and Standing Orders connected with Papers read to the Association shall be printed in the Annual Circular.

10. Papers communicated by Members for Non-Members, and accepted by the Council, shall be placed in the Programme below those furnished by Members themselves.

11. Papers which have been accepted by the Council cannot be withdrawn without the consent of the Council.

12. The Council will do their best so to arrange Papers for reading as to suit the convenience of the authors; but the place of a Paper cannot be altered after the Programme has been settled by the Council.

13. Papers which have already been printed *in extenso* cannot be accepted, unless they form part of the literature of a question on which the Council has requested a Member or Committee to prepare a report.

14. Every meeting of the Council shall be convened by Circulars, sent by the General Secretary to each Member of the Council, not less than ten days before the Meeting is held.

15. All Papers read to the Association which the Council shall decide to print *in extenso* in the Transactions, shall be sent to the printer, together with all drawings required in

illustrating them, on the day next following the close of the Annual Meeting at which they were read.

16. All Papers read to the Association which the Council shall decide not to print *in extenso* in the Transactions, shall be returned to the authors not later than the day next following the close of the Annual Meeting at which they were read; and abstracts of such Papers to be printed in the Transactions shall not exceed one-fourth of the length of the Paper itself, and must be sent to the General Secretary on or before the seventh day after the close of the Annual Meeting.

17. The printer shall do his utmost to print the papers in the Transactions in the order in which they were read, and shall return every Manuscript to the author as soon as it is in type, *but not before*. They shall be returned *intact*, provided they are written on loose sheets and on one side of the paper only.

18. Excepting mere verbal alterations, no Paper which has been read to the Association shall be added to, without the written approval and consent of the General Secretary; and no additions shall be made except in the form of notes or postscripts, or both.

19. In the intervals of the Annual Meetings, all Meetings of the Council shall be held at Exeter, unless some other place shall have been decided on at the previous Council Meeting.

20. When the number of copies on hand of any 'Part' of the Transactions is reduced to twenty, the price per copy shall be increased 25 per cent.; and when the number has been reduced to ten copies, the price shall be increased 50 per cent. on the original price.

21. The Bye-Laws and Standing Orders shall be printed after the "Rules" in the Transactions.

22. All resolutions appointing committees for special service for the Association shall be printed in the Transactions next before the President's Address.

REPORT OF THE COUNCIL.

As presented at the General Meeting at Torrington, July 27th, 1876.

THE Council have the gratification to report that the stream of prosperity which has accompanied the Association from the commencement of its labours in 1862, and which has formed the subject of congratulation on many former occasions, continues to flow unabated.

The Thirteenth Annual Meeting was held at Teignmouth, under the Presidency of the Right Honble. The Earl of Devon, commencing on Tuesday, July 28th, and continuing on the two following days. No efforts were spared by the local officers to ensure a successful meeting, and the arrangements for the accommodation of Members were of a most satisfactory character.

The Preliminary Meeting of the Council was held at two o'clock, in the Athenæum, and was immediately followed by the General Meeting. In the evening, at eight o'clock, the President, who was introduced by Dr. Mackenzie, one of the ex-Vice-Presidents, in a few well-chosen words, delivered his Introductory Address to a large and crowded audience.

On Wednesday, the 28th, the Association met at 11 a.m., and commenced the reading and discussion of the following programme of Papers:—

Sketch of the History of Teignmouth .	<i>W. C. Lake, M.D.</i>
Notes on Wayside Crosses in the East of Dartmoor, North of the River Teign }	<i>G. Warcing Ormerod, M.A., F.G.S.</i>
Notes on Wayside Crosses in the East of Dartmoor, South of the River Teign }	
Notes on Trappean Rocks	<i>J. E. Lee, F.G.S., F.S.A.</i>
A Sketch of Bishopsteignton	<i>Rev. Treasurer Hawker, M.A.</i>
Meteorology of Teignmouth, 1854 to 1860	<i>W. C. Lake, M.D.</i>

The Rainfall on the St. Mary's Church Road, Torquay, during the ten years ending with December 31st, 1873 . . .	W. Pengelly, F.R.S., F.G.S.
The Rainfall in Devonshire in 1873, and in the eight years ending with December 31st, 1873 . . .	W. Pengelly, F.R.S., F.G.S.
The Climate of Sidmouth, for the year 1873 . . .	J. Ingleby Mackenzie, M.D.
On Self-Registering Meteorological Instruments . . .	E. Vivian, M.A., F.M.S.
Sanitary Arrangements for Villages and Small Places . . .	E. Appleton.
On Early Christian Art . . .	Rev. J. E. Risk, M.A.
Archæological Notes on Torre Abbey . .	E. Appleton.
The Early Poetry and Poets of Devonshire . . .	J. R. Chanter.
A Calendar of Devonian Poets with Notices of obscure and forgotten Versifiers from the 11th to the 17th centuries . . .	J. R. Chanter.
On the occurrence of Mineral Oil in the Shale at Barnstaple . . .	Townshend M. Hall, F.G.S.
On a Contortion of the Limestone of Torquay, and the presence of <i>Calceola sandalina</i> at its base . . .	A. Champenowne, M.A., F.G.S.
Workhouse Children and their Treatment, as illustrated by a large Union in Devon . . .	Rev. Treasurer Hawker, M.A.
Notes on Dr. Rivière's Discovery of Three New Human Skeletons in the Mentone Caverns in 1873-4 . .	W. Pengelly, F.R.S., F.G.S.
Fauna of Devon. Part X. Conchology . .	E. Parfitt.
On the <i>Malva lavatera arborea</i> . . .	Geo. Fearcock, F.R.G.S.
Notes on Recent Notices of the Geology and Palæontology of Devonshire . .	W. Pengelly, F.R.S., F.G.S.
The Common Seals of Devon. Part II. .	R. N. Worth, F.G.S.
Winds and Storms . . .	P. Verrill.
On Salmon Passes . . .	W. B. Scott.
Notes on the Limestone of Yealmpton and its associated Rocks . . .	R. N. Worth, F.G.S.
Notes on the Natural History of Teignmouth and its Vicinity . . .	W. R. Hall Jordan.
Fauna of Devon. Part XI. Myriopoda . .	E. Parfitt.
Sketch of Winthrop Mackworth Praed . .	Rev. Treasurer Hawker, M.A.
Devonshire Witches . . .	P. Q. Karkeek.
Sessile-eyed Crustacea of Devon . . .	Rev. T. R. R. Stebbing, M.A.
Archæological Memoranda . . .	N. S. Heineken.
The Bone Cavern discovered in Windmill Hill, Brixham, South Devon, in 1858 }	W. Pengelly, F.R.S., F.G.S.

In the evening the Annual Dinner took place in the New Assembly Rooms, where the host served *à la Russe* a most

recherché repast. The Chair was occupied by the President, who was supported by several of the Vice-Presidents; and there were present about seventy Members and Associates. The party subsequently attended a *soirée* given by the Local Committee in the splendid suite of rooms belonging to the East Devon and Teignmouth Club, where a brilliant company was assembled. The entertainment provided, and the magnificent prospect from the balcony of the Club House over the broad expanse of waters dancing under a cloudless sky in the silver moonlight, afforded rich enjoyment to all.

On Thursday, 30th, the reading of Papers was resumed at 10 a.m., and continued without interruption until 3 p.m., when, the programme having been completed, a General Meeting and Meeting of the Council followed, and the Meeting of 1874 was brought to a close.

The Council desire to record their high appreciation of the courtesy of the officers of the East Devon and Teignmouth Club in granting the privileges of Honorary Members of the Club to Members of the Association during the continuance of the Meeting, privileges of which many of the Members eagerly availed themselves.

It having been resolved that the next Meeting be held at Torrington, the following were elected officers for that occasion :

President : The Right Hon. Lord Clinton. Vice-Presidents: The Worshipful the Mayor of Torrington; Rev. S. Buckland, M.A.; W. Cann, Esq., F.R.H.S.; Rev. F. T. Colby, B.D., F.S.A.; W. A. Deane, Esq.; The Right Hon. the Earl of Devon; W. H. Gamlen, Esq.; H. S. Gill, Esq.; J. G. Johnson, Esq., M.P.; W. Halliday, Esq., M.A.; Dr. A. Kingdon; Rev. C. E. Palmer, M.A.; W. E. Price, Esq.; The Hon. Mark Rolle; J. C. Moore Stevens, Esq.; R. L. Tapley, Esq. Hon. Treasurer: E. Vivian, Esq., M.A., Torquay. Hon. Local Treasurer: M. R. Loveband, Esq. Hon. Secretary: Rev. W. Harpley, M.A., F.C.P.S., Clayhanger, Tiverton. Hon. Local Secretary: George Doe, Esq.

The Council have to report, however, that previous to their winter Meeting the President-elect announced that he felt

constrained, through his official duties, to resign the office to which he had been elected, and accordingly, when they met in February last, they proceeded, under Rule 13, to fill the vacancy, and unanimously elected R. J. King, Esq., of Crediton, to the office.

The Council have published the President's Address, together with Papers read before the Association; also the Treasurer's Report, a List of Members, and the Rules, Standing Orders and Bye-Laws; and thus completed the sixth volume of the Transactions of the Association.

Copies of the Transactions have been sent to each Member, and to the following societies :—The Royal Society, Linnæan Society, Geological Society, Ethnological Society, Royal Institution (Albemarle Street), Devon and Exeter Institution (Exeter), Plymouth Institution, Torquay Natural History Society, Honiton Literary Institution, Barnstaple Literary and Scientific Institution, Royal Institution (Cornwall), the Library of the British Museum, the East Devon and Teignmouth Club, and the Secretaries of the London and South Western and the South Devon Railway Companies.

In conclusion the Council desire to reiterate the thanks they have given on former occasions to the London and South Western and South Devon Railway Companies for their continued courtesy in granting facilities of attending the Meeting.

Treasurer's Report of Income and Expenditure during the Year ending July 27th, 1875.

RECEIPTS.

	£	s.	d.
Balance in Treasurer's hand July 2nd, 1875	41	13	11
Arrears of Annual Contributions for 1873-3	0	10	0
Ditto 1873-4	9	10	0
Annual Contributions for 1874-5	127	10	0
Ditto 1875-6	10	10	0
Ditto 1876-7	0	10	0
Life Compositions	25	0	0
Ladies' Tickets sold at Teignmouth	0	15	0
Interest on Deposit to June 30th, 1875	6	0	0
Sale of "Transactions," 5 copies for 1862 0 7 6			
Ditto 8 ditto 1863 0 16 0			
Ditto 7 ditto 1864 1 1 0			
Ditto 7 ditto 1865 0 17 6			
Ditto 5 ditto 1866 0 15 0			
Ditto 5 ditto 1867 1 10 0			
Ditto 4 ditto 1868 1 6 0			
Ditto 3 ditto 1869 1 6 0			
Ditto 4 ditto 1870 1 4 0			
Ditto 4 ditto 1871 1 6 0			
Ditto 2 ditto 1872 1 10 0			
Ditto 2 ditto 1873 0 12 0			
	12	11	0
	<u>£234</u>	<u>9</u>	<u>11</u>

Annual Contributions remaining unpaid for 1873-4 2 0 0
Ditto 1874-5 7 0 0
£9 0 0

We have compared the Books and Vouchers presented to us, and find them correct.
(Signed)

Torquay, July 24th, 1875.

PAYMENTS.

	£	s.	d.
Deposited at Interest in Torquay Bank	25	0	0
Brendon & Son for Printing "Transactions" (1874)	134	17	6
Ditto Illustrating ditto	18	11	0
Ditto Postage and Carriage of Parcels	16	12	6
Ditto Printing Cards, Bills, and Circulars	3	5	0
Ditto Printing Title Page and Index to vol. VI.	1	17	6
Ditto Stationery	0	13	0
Hutchings for Printing Programmes	0	13	6
Torquay Directory Co. for Printing Circulars	1	0	0
Hon. General Treasurer for Petty Expenses	3	2	1
ditto ditto	4	17	8
Hon. Local Secretary	0	5	0
Advertising in 1874	5	13	6
Balance in Treasurer's hand 24th July, 1875	18	1	8

£234 9 11

(Signed) EDWARD VIVIAN, TREASURER.

Torquay, July 24th, 1875.

GEO. E. HEARDER,
CALEB WEEKS, FOR E. APPLETON, } AUDITORS.

Torquay, July 24th, 1875.

STATEMENT OF THE PROPERTY OF THE ASSOCIATION,

July 27th, 1875.

					£	s.	d.
Deposit at Interest in Torquay Bank (Life Compositions of forty Members)	.	.	.	.	200	0	0
Balance in Treasurer's hand	.	.	.	.	18	1	8
Arrears of Annual Contributions, valued at	.	.	.	.	3	0	0
"Transactions" in Stock, 1862 ..	28 copies at 1s. 6d.	.	.	.	2	2	0
"	"	1863 ..	110	"	2s. 0d.	11	0
"	"	1864 ..	128	"	3s. 0d.	19	4
"	"	1865 ..	127	"	2s. 6d.	15	17
"	"	1866 ..	102	"	3s. 0d.	15	6
"	"	1867 ..	100	"	6s. 0d.	30	0
"	"	1868 ..	70	"	6s. 6d.	22	15
"	"	1869 ..	18	"	10s. 0d.	9	0
"	"	1870 ..	45	"	6s. 0d.	13	10
"	"	1871 ..	42	"	6s. 6d.	13	13
"	"	1872 ..	7	"	15s. 0d.	5	5
"	"	1873 ..	46	"	6s. 0d.	13	16
"	"	1874 ..	48	"	8s. 6d.	20	8
					£412	18	2

(Signed)

W. HARPLEY,

Hon. Secretary.

(Signed)

W. HARPLEY,

Hon. Secretary.

RESOLUTIONS APPOINTING COMMITTEES,

Made by the Council at the Meeting at Torrington,

JULY, 1875.

That Mr. J. R. Chanter, Rev. W. Harpley, Rev. Treasurer Hawker, Mr. B. J. King, Mr. W. Pengelly, and Mr. J. Brooking Rowe be a Committee for the purpose of considering at what place the Association shall hold its Meeting in 1877, and who shall be invited to be the Officers at that Meeting; that Mr. Pengelly be the Secretary; and that they be requested to report to the next Winter Meeting of the Council.

That Mr. P. F. S. Amery, Mr. H. S. Ellis, Mr. H. S. Gill, Dr. W. C. Lake, Mr. E. Parfitt, Mr. W. Pengelly, Dr. W. T. Radford, Rev. T. R. R. Stebbing, and Mr. E. Vivian be a Committee for the purpose of making and obtaining observations on a uniform system on the Meteorology of Devonshire; and that Dr. Lake be the Secretary.

That Mr. George Doe, Rev. W. Harpley, Mr. H. S. Gill, Mr. B. J. King, Mr. E. Parfitt, Mr. W. Pengelly, and Mr. J. Brooking Rowe be a Committee for the purpose of noting the discovery or occurrence of such facts in any department of scientific inquiry, and connected with Devonshire, as it may be desirable to place on permanent record, but may not be of sufficient importance in themselves to form the subjects of separate papers; and that Mr. Pengelly be the Secretary.

That Mr. P. F. S. Amery, Rev. W. Harpley, Mr. P. Karkeek, Mr. B. J. King, and Mr. J. Brooking Rowe be a Committee for the purpose of collecting notes on Devonshire Folk-Lore; and that Mr. King be the Secretary.

PRESIDENT'S ADDRESS.

LADIES AND GENTLEMEN,—The Association which to-day opens its fourteenth annual meeting has been too long established, and its objects are now too well known, to make it necessary for your President to dwell on them, or to insist on the great advantages to be derived from such an union and from such gatherings as our own. I shall therefore follow the example of those of my predecessors, who in addressing you on similar occasions have discussed some special subject; and whilst pointing out the present condition of our knowledge of it, have shown in what manner the Association might best work, with the object of increasing that knowledge. Thus we are indebted to Mr. Pengelly for calling our attention to certain periods in the geology of Devonshire, which are nowhere more instructively treated than in the address with which he opened the meeting at Barnstaple eight years ago. Our society is essentially a local one, and may do much by common action within its own limits. There are some points in the general history of the county, and especially in the earlier portion of it, on which I am sure much light might be thrown, by a bringing together of results afforded by careful local enquiry and examination which when looked at singly might seem to tell us little or nothing. This bringing together is our proper work; and it is with the object of pointing out where we may be of service that I proceed to say something about Devonshire history, and about those divisions of it on which students either disagree or are waiting for more information.

The great western peninsula, the ancient Damnonia, including Cornwall, Devonshire, and a part of Somersetshire, is one of those portions of England which have a real history. Of many shires and counties it cannot be said that they have a history at all, in any true sense; for although events may

have taken place in them which affect the general history of the country—such as a great battle, or a great council—these might just as well have occurred anywhere else, and are but slightly, if at all, connected with any special local circumstances or position. But there are some districts which from various causes—and these are generally, in the first place at least, of a geographical or topographical nature—are marked by a certain isolation from the earliest time at which they appear on the historical stage, of which the history is more or less self-contained, and which continue to retain a special character even to the present time. This special character is due, of course, to the combined influences under which the district or the province has developed itself. Race has much to do with it, and still more perhaps the circumstances under which one race or people has encountered, or been absorbed by another. Again, a powerfully affecting cause is to be found in the connections (commercial or otherwise) which have been formed by the people of the district, always under the necessities of geographical position. Indeed, it is this accident of position which underlies the whole. Such a district, for example, as that of Cleveland, in Yorkshire, is naturally marked out by its boundaries of sea and wild moorland, and it is owing to the strength and the isolation thus afforded that it has retained, in a greater degree than any other corner of England, the traces of its Danish settlement. Cleveland, like Dartmoor, is an isolated district within the greater shire; and the great shire of York itself is but a portion of the older Northumbrian kingdom. In the case of East Anglia, however, not only the names of its two portions (Norfolk, Suffolk), the lands of the north and of the south folk, mark its ancient distinction, but the natural boundaries isolated not only a district, but the whole of the ancient kingdom. The deep estuaries of the Stour and the Orwell on the south, and on the north the sea and the quicksands of the Wash, were at once highways and limits—highways by which Angles and Danes found their way into the country, and limits which sufficiently separated it from its neighbours. And into the Wash flow the still, broad rivers, carrying with them the drainage of the fen country which stretches along on the west of East Anglia, and which in ancient times formed a sort of march or debatable land between that kingdom and Mercia. It was then an enormous marshland, haunted by myriads of wild fowl, with a few islands of firmer soil rising here and there from the reeds and rushes. These became the retreats of hermits and solitaries—safe as it

seemed in this almost inaccessible country; and from their cells and huts were at last developed the great Benedictine monasteries of the fens—Ely, Peterborough, Crowland, and Ramsey. Between the marshland, the sea, and the rivers, East Anglia was confined very much within itself; and it is this island-like character which has given the country a real history, and long preserved so many peculiar features of old English polity and civilization which elsewhere were soon obliterated. Great political questions and disturbances which affected the rest of England were never ignored in East Anglia; often indeed they took there a fiercer and more determined character. But it is very noticeable that on all such occasions—as, for example, in the great rising in 1381, generally known as Wat Tyler's, and in that called the "rebellion" of the Ketts in 1549—the men of Norfolk and Suffolk, like the famous Smith of Perth, "fought for their own hand," dwelling on their own special grievances, caring little for the settlement of the question elsewhere; whilst in the wars of the Roses, and in those of the seventeenth century, they gave their support to neither party, but mainly aimed at their own safety and protection. A peculiar type, which is probably that of the true Anglians—the first Englishmen who settled on that shore—is to this day discernible throughout the greater part of Norfolk and Suffolk—a thoroughly English district, if there be any within this island.

Thus it is that East Anglia has a real history, unbroken in reality, however the appearance may be, from the days of the Bretwalda Rædwald. There is the strongest resemblance between the historical character of East Anglia and that of Devonshire, or, as I must here say, of Devonshire and Cornwall—a resemblance which is, in truth, only the greater because many of the details vary so completely. East Anglia is purely English. The Britons and Brito-Romans were completely exterminated or expelled. Damnonia is more than half Celtic; and the conquering English either incorporated the older race, or allowed them to dwell beside them under some kind of protection. But in the extreme west, as in the extreme east of the island, the natural boundaries of the district greatly isolated the inhabitants, banded them together in spite of the mixed race, and produced at last a local character quite as distinct as that of the men of Norfolk, though widely different. The geographical position and the race of the inhabitants here, as in East Anglia, underlie and supply the key to the whole of

the later story. The geography of Devon and Cornwall speaks for itself; and it is hardly necessary to point out, that as the connexions and associations of East Anglia were mainly with Flanders and the Low Countries, so those of Damnonia were naturally, on the one hand, with Wales—the long line of whose coast, stretching away to the Orm's Head, is within sight from the northern cliffs; and on the other with the more distant, but hardly less well-known, Armorica. But the mixed race of Devonshire and Cornwall, and the circumstances of the English conquest here, are of so great importance in their bearing on the local history, and, as a necessary result, on the general history of the country, that I must dwell on them at some length, especially as the time and the manner of the English conquest are very obscure; and I am anxious to suggest to the members of such an Association as our own, points on which careful observation may possibly supply further knowledge: though in the absence of definite entries in the Chronicles we can hardly hope to trace the advance of the West Saxe into Devonshire with anything like the clearness and certainty that Dr. Guest and Mr. Freeman have brought them to the northern border of the county.

Cerdic and Cynric, the founders of the West Saxon kingdom, landed on the Hampshire coast in the year 495. Their conquests, and those of their successors, gradually extended the boundaries of the West Saxe, until, more than a century and half after the landing of Cerdic, Cenwealh, after a battle "at the Pens,"* in 658, advanced the frontier to the Parret. The progress of the English was stopped more than once for considerable periods. Thus the land between the Avon and the Axe was won by Ceawlin, at the battle of Deorham, in 577; but the Britons retained a long strip of country running up towards Malmesbury, which was not won until Cenwealh fought the battle of Bradford in 652. In the same manner, after the battle of the Pens, in 658, we hear of no further attack on the western Britons until 683, when the Chronicle briefly says that Centwine "drove the Bretwalas to the sea;" and, nearly thirty years later, in 710, we are told that "Ine, and Nun his kinsman, fought with Gerente, the Welsh king," and obtained a great victory. The scene of this battle is unknown, but it certainly gained for the English the whole of south-west Somersetshire; and it was soon afterwards that Ine founded the "burgh" of Taunton, no doubt as a border fortress for the defence of his new conquests. Thus,

* "Æt Peonnum"—*Chron. ad Ann.*

at the end of the first decade of the eighth century, the boundaries of Welsh and English—of the Britons of West Wales, or Damnonia, and of the West Saxe—followed very nearly the line which at present divides the counties of Devon and Somerset. To the immediate south and west of this line Gerente, or Geraint, still ruled. To the north ruled Ine, king of the West Saxe. The line bears all the signs of an ancient "mark" or frontier, and of one which must have remained unmoved for a considerable time. Such a mark was among all the Teutonic races placed under the immediate keeping of gods or heroes. It was the haunt of "fierce moor-steppers," like the Grendel in *Beowulf*; and all manner of powerful elves and spirits made it their especial home. The hero to whom the English conquerors assigned this mark may have been Sigmund the Wælsing, the "mighty dragon slayer" of old songs and traditions. Simonsbath, a deep pool on the Barle, nearly in the line of the present boundary, preserves his name and his memory as a great outlaw and hunter; and Simonsburrow, a large "tump" or barrow on the highest point of the Blackdown-hills, near Wellington, and on the very division of the two counties, also belongs to him, and is marked as the burial-place of some great and unknown king.*

Thus we bring the English to the northern frontier of what is now Devonshire. The British, or Welsh kingdom, which they had been attacking, and which they were eventually to break down, was, if not more powerful than any other British principality remaining within the whole island, at least the most powerful in the south. Its king, Geraint, is addressed by St. Ealdhelm of Sherborne, in 705, as "the most glorious lord of the western realm;" and "his personality had clearly, from some cause or other, made a deeper impression on the minds of Englishmen than that of most of his countrymen."† "The strength of the Damnonian kingdom is witnessed by the slow steps by which Wessex advanced at its expense. Even after Ceawlin had cut off West Wales from North Wales," or what is now the principality, "it took the English one hundred and thirty-three years to make their way from the Avon to Blackdown."‡ Damnonia must have retained such Roman civilization as lingered anywhere in

* The name Simon or Symon is frequent in other parts of England, in similar wild, uninhabited districts, and on ancient boundary lines. I have given examples in a paper on the "Folk Lore of Devonshire," in *Fraser's Magazine* for December, 1873.

† FREEMAN, *King Ine*, p. 46. *Somersetshire Archaeological and Natural History Society's Proceedings*, vol. xviii.

‡ Ibid, p. 47.

Britain; and it is hardly possible to doubt that it was from the long continuance of this British kingdom, and from the manner in which the English conquerors became connected with it, and finally absorbed it, that much distinctly British legend and tradition became known to the Saxons, was at length mingled, as years went on, with their own tribal and Teutonic traditions, and finally became accepted as broadly national. The growth of Arthuric romance may be partly thus accounted for; and the famous legend of Brutus of Troy, and of his landing at Totnes, which, historically monstrous as it is, was nevertheless universally received by mediæval chroniclers and historians, is, I believe, directly due to the beliefs which, caught from their Roman masters, were still cherished among the Brito-Romans of Damnonia.*

In what manner, then, did the English advance into what is now Devonshire, and under what circumstances? It has been usual to assert and to believe that no English conquests whatever had been made within the limits of the present county when Ine fought with Gerente and constructed his border fortress at Taunton. We may be sure that no farther advance had been made at that time on the north. But is it so certain that Damnonia—the present Devonshire and Cornwall—had been unassailed from other quarters? This is a point which well deserves far more consideration than it has as yet received. My own strong impression is—and on a subject so obscure, yet, as we shall presently see, so important in many ways, it is necessary to be most cautious in making positive assertions—that for a considerable time before the victory of Ine, in 710, the British kingdom had been gradually shrinking on the west and south. We know little or nothing, at least nothing certain is recorded in the chronicles, of the manner in which the Saxons extended their limits to the west beyond Old Sarum (Searbyrig), where Cynric fought with and conquered the Bretts in 552.† We are left to conjecture at what time, and how, what is now Dorsetshire became part of the west Saxon kingdom; but it certainly, after the Saxons acquired it, retained much of its British population, since it is one of the shires or districts marked as of the “Welsh Kin”

* The story first occurs in Nennius, but without the mention of any place of landing. This is supplied by the romancing Geoffry of Monmouth. But his localities were hardly chosen at hazard. “Dertemue in Totones,” which is Layamon’s version of the “Littus Totonesium” of Geoffry, was the chief point of departure from the Greater Britain to the Less; and old British legend may have been connected with it long before the time of Geoffry.

† “A.M. DLII. Her Cynric gefeaht with Brettas in there stowe the is genemned Searbyrig.”

in the will of King Alfred. Possibly there, as in the south and west of Devonshire, settlements were gradually pushed beyond the recognized English border by small bodies of men, strong enough to defend their own new positions, but on the whole establishing themselves in more peaceful fashion than would be the case when an entire district lay at the mercy of the conquerors after a great battle. No doubt too, after the English had become Christians, such settlements would be more easily made; since the common belief of the two races must have rendered intercourse between them somewhat more possible than when the new-comers were the fierce followers of Tunor and of Woden. In this manner, as I believe, the Saxons pushed themselves farther and farther westward; establishing themselves in positions more or less isolated, like backwoodsmen in an American forest, but with more system, and perhaps in every case in larger numbers. The small district known as the Sewers, on the south coast near the Bolt Head, perhaps marks such a settlement of "sæ-ware"—"dwellers by the sea."* Again, much farther to the west, an earthwork called the Giant's Hedge runs from the head of the Trelawne inlet on the Looe river for some distance westward, through Lanreath, cutting off a small coast district from the inland country. It was evidently thrown up by some body of men arriving from the sea, and settling among those of a different race; and the invaders may have been English.† It was thus perhaps that they advanced from the western border or from the southern coast as far as Exeter, where, in the time of Æthelstan, they were inhabiting the city, *æquo jure*,—with the same right—as the Britons, who seem never to have been expelled, but who nevertheless resigned a considerable portion of the city to the new-comers. This fact—and Mr. Kerslake, in the very interesting paper which he read before the Archæological Institute during their meeting at Exeter in 1873, pointed out, from the dedication of the churches, the portions of the city which were occupied by the two races‡—indicates in all probability an early occupation by the Saxons, and one of a comparatively peaceful character. They must have been strong enough to

* There are East, West, Middle, and Lower Sewers; and the farm-houses bear the same name. If this really signifies "sæ-ware," the earlier comers must have been so named by later English colonists.

† The Giant's Hedge runs in a straight line, up and down hill indifferently, for about seven miles. At Lanreath, in Borlase's time, it was seven feet high and twenty feet wide. It is perhaps worth noticing that the dialect of the isolated district, as is shown in the glossary attached to Couch's *History of Polperro*, is far more Teutonic than Celtic. The place-names are nearly all Celtic.

‡ "The Celt and the Teuton in Exeter."—*Archæological Journal*, vol. xxx.

occupy and to retain their division of the city, which was that towards the south-west; but either not sufficiently numerous at the time of their first settling to expel the Britons altogether, or there were some special circumstances at which we have no means of guessing. But such a partial occupation of Exeter certainly looks like the crowning effort of a small body of colonists, advancing inland from the coast, and allowed to settle, on half-friendly terms, in a district from which the old inhabitants were not sufficiently powerful to exclude them altogether.

It is indeed possible that Teutonic sea-rovers had made their appearance as far west as Devonshire in the latter days of the Roman power, just as we know they appeared off the eastern and southern coasts, which from their attacks acquired the name of the "Saxon shore." Strong fortresses were built along this shore by the Romans, partly perhaps under the direction of the great Stilicho, to defend it from the Northern pirates; and the whole were placed under the authority of the officer known as the "Count of the Saxon shore." These fortresses, or some of them, as Dubræ (Dover), Portus Lemanis (Hythe), Anderida (Pevensey), and Rutupiæ (Sandwich), were the germs from which afterwards sprang the Cinque Ports. The remains of Anderida, of Portus Lemanis, and of Rutupiæ are considerable, and show us plainly enough what was the character of a Roman walled castrum at that period. I mention all this in order to direct the attention of the Association to some very remarkable remains at the head of the estuary of the Erme, on a farm called Oldaport. There was here a walled fortification, enclosing about thirty acres. The plan, which is quadrangular, shows the foundations of two round towers, and of walls five feet in thickness, with two entrances, each about nine feet wide. Near one of these is a well of very pure water, in which some few years since a spear-head was found, and was pronounced Roman by the very competent authority of Mr. Franks. The old "port" (Oldaport) gave name to the family of De la Port, who possessed it from a very early period. Port, according to Kemble, means in strictness an enclosed place for sale and purchase—a market. It occurs in the name of the great fortress Portchester, in Hampshire, of which the Roman origin is undoubted. These Devonshire remains await a thorough examination, which I had hoped myself to have given them before the present meeting. Meanwhile everything seems to indicate that they are of older date than the first English settlements; and the construction of so strong a fortress on the Western coast

points to danger apprehended from the sea, whether from Teutons or Celts. It may have been the work of the Romans before their withdrawal from the Island; or it may have been raised by some British king of Damnonia, working and building under Roman traditions, for the defence of his coast against the swords and the "keels" of the descendants and followers of Cerdic and Cynric.

It is of course possible, in spite of the silence of the Chronicles, that the Saxons more than once attacked the western border of Devonshire, just as they did the northern, with their whole host, and in regular warfare. There is a tradition of a great fight at Axminster, on the extreme border of the county, which is at least as old as the fourteenth century, when it is fully recorded in the register of Newenham Abbey.* The battle, it is said, began at the hill of St. Calixtus, in Devonshire, and ended at a place called Colecroft. Five kings and seven earls fell in it; and Æthelstan, so runs the record, founded the minster of the Axe, in order that priests might pray there continually for the souls of the slain. It is at once evident that we have here a recollection of the great battle of Brunanburh, fought in the year 937, and "still living in the earliest and noblest of those national lays with which the chronicles relieve the direct course of their prose narrative." In spite of local enthusiasts, however, no scholar, no historical student of any class, would now dream of placing the scene of this fight, regarded at the time as the hardest victory that Saxons and Angles had ever won, at Axminster. Wherever Brunanburh was, in was certainly in Northumbria. But the details of the famous song may have become connected, after a fashion not unknown in the growth of legend, with the tradition of a real fight at Axminster; and it is by no means impossible that the minster was erected on the field by the victors, just as in the cases of Cnut's minster at Assandun, and of the Conqueror's at Senlac. The minster of the Axe certainly existed in 755 (more than a century and a half before Æthelstan), when the body of Cyneheard the Ætheling was brought to it for interment.† What was its age at that time we do not know; but the tradition of a great battle does not get fixed anywhere without some cause; and we may fairly suggest that this Axminster fight, unrecorded as it is, was a reality, and that the opposing hosts were those of the Saxons and of the Britons of Damnonia.

* OLIVER'S *Monasticon*, p. 317.

† "And his lic" (the body of Cynewulf the king) "lith on Wintanceastre; and thæs æthelinges set Axanmynster."—*Chron. ad. Ann.*

If the minster were then founded, it follows by implication that the battle gained for the Saxons a considerable extent of country west of Axminster. A minster, at least without an attendant fortress, would not have been established on a frontier.

However this may be, and whether the Saxon advance was assisted or not by such a victory, the gradual occupation of the country from the west and from the south seems tolerably certain. It need hardly be said that such a method of settlement must have tended to an intercourse between the two races very different from that, which was really no intercourse at all, which accompanied the first great conquests of the West Saxe. This would have been the case even under the supposition that some Saxon colonists established themselves in what is now Devonshire while they were still heathen. This may have been so ; but we can hardly suppose that much advance was made until after the year 635, when Cynegils of Wessex was baptized by Birinus, and, as generally happened, the people at once showed themselves ready to follow the king in their adoption of the new faith. After that time the direct conquests of the Saxons, wherever they were made, became greatly changed in their character and results. The Britons were no longer exterminated ; they were, perhaps, not even driven from their old country, although they no doubt left it of their own accord in great numbers ; but those who remained were Christians like the victors. Within the walls of Exeter the churches of the British saints Petrock and Kerian still stood, whilst the Saxon incomers raised their own, and dedicated them after their own fashion. The site of the existing cathedral is, in part, that on which was built what may well have been the first English church in Exeter. If the religious house to which Winfrith, afterwards known as St. Boniface, was sent by his parents about the year 680, was, as I must believe, in Exeter, it was probably the same as that in the church of which the "bishopstool" of Leofric was afterwards set up. I have elsewhere discussed the history of St. Boniface, and have given my reasons for adhering to the old and received tradition that he was born at Crediton.* Of course, if this be so, it follows that at least one important English settlement had been made some time before in the neighbourhood of Exeter ; and that part of Exeter itself had already, in 680, been occupied by Englishmen, who, with all

* "The Birthplace of Winfrith, or Saint Boniface, as bearing on the English Conquest of Devonshire."—*Proceedings of the Somersetshire Archaeol. and Nat. Hist. Soc.* vol. xx.

the zeal of new converts—for not more than forty-five years had passed since Birinus had baptized Cynegils—had established a monastery of some kind within their quarter of the city.

According therefore to the theory which has here been set forth, the British kingdom of Damnonia, very powerful at first, and still, toward the end of the seventh century, one of great and formidable strength, had nevertheless by that time been compelled to receive bodies of English settlers in different parts of it, whilst the western frontier had perhaps been driven inward, it may be, as far as the line of the river Exe. In considering this advance of the Saxons, it must never be forgotten that their numbers, and the numbers of the Britons opposed to them, were comparatively small, and that the country itself must have afforded many districts in which the new-comers might settle after their own fashion, almost without neighbours. We are too apt to forget that the great increase of population in this country dates mainly from the beginning of the present century; and I believe that, were it possible to roll back the stream of time, so that we might look once more on the Devonshire of even mediæval days, there is nothing that would strike us so greatly as the silence and solitude of the wide landscapes, the evidences of a scanty population, the few travellers, the small and thinly-sprinkled hamlets. And far more would this be the case in those early centuries of which we have been speaking. Under the Romans, what is now Devonshire was a wild and rough district, intersected by few roads, which for the most part were allowed to remain little better than British trackways. There are no traces of such great and luxurious villas as those which occur in Sussex or in Gloucestershire. Exeter alone, the Roman Isca, on the ridge of her promontory, displayed anything like the architectural importance which must have characterized the greater towns of Roman Britain. The great mass of the country was uncleared and wild. So it continued long afterwards; and when St. Ealdhelm, or his pupil, writing in the eighth century, talks of “*dira Domnonia*,” the fearful land of Domnonia,—and of Cornubia, “*destitute of flowery turf, and of fruitful grain*,” we may conclude that the face of the country is partly referred to under the first epithet, as it certainly is in the latter description.* The

* “*Sicut pridem pepigeram,
Quando profectus fueram
Usque diram Domnoniam,
Per carentem Cornubiam*”

country into which the English first made their way was for the most part covered with forest and brushwood, or was broken into high upland moor and rock-strewn heath; such a land, with its deep valleys and dashing hill streams, as formed the stronghold of the Celtic race all along the western side of the island. The wolf still howled in the woods; the beaver, it may be, still built his huts in the bays of the more quietly flowing rivers; the golden eagle haunted the tors of Dartmoor, and flung the shadow of his outstretched wings upon the deep oak woods as he sailed high in air above them. All wild creatures of flood and of field abounded; but the population, scattered over the whole of Devonshire, was perhaps not nearly so numerous as that of Exeter alone at present. And if we imagine ourselves looking from some high open ground over Exeter and the range of country that stretches away toward the north-eastern border of Dartmoor, the city itself would appear narrowed to the dimensions of the square Roman castrum, hardly to be distinguished indeed from the rough coppice which closed up around it, except where the broken pediment of some greater temple, or a taller mass of wall, lifted themselves above the low and narrow lines of building. But over the great, far-extending landscape, which is now so studded with evidences of busy and prosperous life, with towns, and villages, and church towers, hardly a sign of human labour or of human life would be visible. Far and wide must have stretched away the great cloud of forest, and the broad moorlands, glowing with furze and heather. A faint wreath of smoke might indicate at rare intervals that some kind of dwellings were there grouped together; but with the exception perhaps of a figure projected against the sky from the rampart of some distant hill-fort (and we know that such hill-forts as Cadbury and Hembury were occasionally occupied during the time of struggle between Saxon and Briton), we should see no human being. A great silence would be resting on the whole country, broken only by the scream of some bird of prey, or the cry of some wild animal.

The Damnonia into which the Saxons penetrated was no doubt a rougher, wilder, less cultivated district than the greater part of southern and eastern Britain. It is possible that the new settlers established themselves in this western peninsula

*Florulentis cespitibus
Et fecundis graminibus."*

The poem will be found in GILES' opera *S. Aldhelmi*, and in JAFFE *Monumenta Moguntina*.

in the same manner, and with the same land arrangements, as they followed in those parts of the island which were conquered in days of pure heathenism, and from which the Celts disappeared altogether. But it is to be observed that neither in Devonshire nor in Cornwall is any trace to be found, so far as I know, of that three-field system which the Teutonic colonists certainly brought with them from the Continent, which they seem to have generally introduced in this country, and of which such remarkable relics existed in eastern England until very recently, if indeed they may not still be found in some places. This is the system which Sir Henry Maine, in his lectures on "*Village Communities in the East and West*,"* has shown to have been at one time common to India and to Europe; and indeed an Indian village community at the present time greatly resembles, and shows that it must once have completely resembled, the township or common settlement of a Teutonic community of the fourth or fifth century, in both Germany and England. Such a settlement, bearing the common name of the "mark," consisted, to use the words of Sir Henry Maine, "of a number of families standing in a proprietary relation to a district divided into three parts. These three portions were the mark of the township or village, the common mark or waste, and the arable mark or cultivated area. The community inhabited the village, held the common mark in mixed ownership, and cultivated the arable mark in lots appropriated to the several families."† Such marks as these were the germs of future parishes, villages, and towns. The settlers, who professed a common descent from some god or hero, human or half-divine, called themselves after his name, and were known as *Æscings*, *Polings*, *Wælsings*—sons of *Æsc*, of *Pól*, of *Wælse*—and of many another "mighty man of valour," of whom the name has only been preserved in this fashion. Mr. Kemble‡ has included the place at which we are now assembled in the list of these patronymics, and makes Tarrington the town, *tún*, or enclosure of the Tarringas, sons of *Tor*. As however I cannot but think that the name of the river is not unconnected with that of the town, we must suppose, if we accept Mr. Kemble's derivation in this case, that the first Saxon settlers here were known as sons of *Tor*, from the neighbourhood of their Mark to the river, which may have retained its Celtic name.

* "*Village Communities in the East and West*." Six lectures delivered at Oxford by Sir Henry Sumner Maine, K.C.S.I. &c., Corpus Professor of Jurisprudence in the University. London, 1872.

† *Village Communities*, p. 78.

‡ *Saxons in England*, vol. i. List of Marks in Appendix.

It is the arable portion of the mark which has left its traces so strongly in various parts of this country, but most strikingly in the east and north. The "common," "commounable," or "open" fields, which sometimes ranged over half a parish, not merely represented, but actually were this original portion. Sir Henry Maine has quoted from Marshall, a writer on agriculture, who published largely between 1770 and 1820, passages which describe the unenclosed condition of Northamptonshire, Huntingdonshire, Cambridgeshire, Lincolnshire, and other counties, at the opening of the present century.* The system in all was nearly the same. The common fields were almost invariably divided into three long strips, separated by green baulks of turf. The several properties consisted in subdivisions of these strips, sometimes exceedingly minute; and, according to very ancient custom, each strip bore two crops of a different kind in turn, and then lay fallow. "The extent," says Sir Henry Maine, "of some of the fields may be inferred from the fact, stated to me on good authority, that the pasturage on the dividing baulks of turf, which were not more than three yards wide, was estimated in one case at eighty acres." The word "feld," or "fild," implied originally an open or cleared space, among forest or brushwood, as the cognate "fjeld" still does in Norway; and it is in the sense of such a clearing that it is used in the English version of the Bible, as when it is said that "Isaac went out to meditate in the field at the eventide."† A Northamptonshire labourer, although his parish may long since have been enclosed, will still talk of "coming in from the field" when his work is done. I must refer you to the very interesting and important book which I have been quoting for a full account of this ancient system in all its details, and for a comparison of it with the systems still in use in different parts of India.‡ It bears marks of an introduction from a drier climate to this country;§ but the whole arrangement

* MARSHALL'S *Elementary and Practical Treatise on Landed Property*. London, 1804.

† Genesis xxiv. 63.

‡ Much very important information on the subject will be found in NASSÉ, *Ueber die mittelalterliche Feldgemeinschaft und die Einhegungen des sechszehnten Jahrhunderts in England*, Bonn. NASSÉ's book has been translated by Colonel Outry, under the title of *Agricultural Communities of the Middle Ages*. London, 1872.

§ "In the time of the ruder agriculture, which has now given way to scientific tillage, the natural fitness of the soil of England was for grass farming, and the tendency to resort to it as the most profitable form of cultivation was apparently irresistible, and out of it grew some very serious agrarian movements. The three-field system was therefore brought by our Teutonic ancestors from some drier region of the Continent."—*Village Communities*, p. 200.

seems to be one of those forms into which all the Indo-European races fall at a certain period of their history. I have dwelt on it here in the hope of directing the attention of the Association to any traces of it which may exist or be proved to have existed in Devonshire. It appears to me doubtful, though I make the remark with great hesitation, whether it ever prevailed in this county so generally, or was carried out in all its details so fully, as was certainly the case elsewhere. It was no doubt known in Wiltshire, half of which in Marshall's time was "commonable;" but we require far more direct evidence than we now have, before we can assert that it ever prevailed here, or perhaps in South Somersetshire. In the first place, a difference in the nature of the western conquests, and in the manner of the first settlements in Devonshire, may have caused some variation in the land arrangements. In the next place, the Saxons, coming into Devonshire, may have found themselves confronted with a system of cultivation and a division of land differing considerably from their own. Deep Devonshire lanes or "hollow ways," even broad-set Devonshire hedges and "meres," or boundaries, may perhaps be more ancient than the days of Ine and Gerent; and it must be remembered that under any hypothesis the Celts long held their ground here, and were brought, as at Exeter, into close connection with the Teutonic invaders. This difference, if it really existed, may perhaps be regarded as another indication that the English conquest of Devonshire was effected in a comparatively peaceful manner. Isolated families of settlers, in the midst of a territory which still remained mainly British, may have been compelled to adopt fashions varying much from those traditionally their own, and may have been influenced by the more numerous, and at that time more highly civilized, people by whom they were surrounded.

What I have said is little more than suggestion. But the whole question is one on which an Association like our own, the members of which are dispersed throughout the county, might reasonably be expected to throw more light. A careful examination and collection of ancient customs relating to manors and manor courts, and a gathering together of such traditions as may yet linger in some remote corners, are at any rate worth undertaking, with the object, of course, of detecting such traces of the old Teutonic land system as they may indicate or retain. Something also may be accomplished by a consideration of the place-names and terminations over the whole county, and of the manner in which

they are grouped. They are, in fact, assembled in groups in a manner more distinct and noticeable than is perhaps the case in any other English county. We have, for example, the "worthys," a termination not entirely, although very nearly, confined to Devonshire; and here almost restricted to the north-western portion of the county and to the border of Dartmoor, where the "worthys" are generally placed within the ring of moorland that encircles the forest proper. Except Cornworthy, near Totnes, I know of no example in South or in East Devon. The word is, no doubt, of great antiquity; that is, it is, at least in the form "worth," older than the appearance of the Saxons in Britain, since it is probably to be recognized in such names as Nonnenwerth, on the Rhine, and Woerth, one of the battle-fields in the late Franco-Prussian war. Although the form "weorth" was not unknown in the south, since we have Tamarweorth as the English equivalent of the "statio Tamara," the Roman camp on the Tamar, it was here almost universally superseded by "weorthig," or worthy, possibly a diminutive, like the Anglian or lowland Scots "ie." But why this form should be so greatly confined to Devonshire, why it should be so rare in adjoining and truly West Saxon counties, as Somersetshire or Hampshire, and so thickly sown over the map of North Devon, it is not easy to say. The form "worth," as in Tamworth, Bridgeworth, possibly indicates a larger and more populous place than "worthy." "Worth" seems to answer to "hall," or "court," the "place" of some great person. "Worthy," as we know from Ælfric's *Glossary*, meant, in the tenth century, a farm, the "place," that is, of some smaller proprietor.* But whether, as Mr. Kirwan suggested, it was applied only to places with some special character, as to a coombe or valley with a well-spring at the head, remains quite uncertain. If we could be sure that any feature was common to the majority of our Devonshire "worthys," we should gain much. The place-names associated with them are either personal, as in the two Wolfhardsworthys, where Wolfhard may have been the first proprietor; or distinctive, as Thornworthy, Fernworthy.

There are other name groups which may indicate with more certainty the character of the country when the English first took possession of it. Thus the "cotes," which abound to such an extent in North Devon (Barnstaple may be

* "Fundus—worthig." It is possible that "weorth" was more especially a northern form, whilst "weorthig" was southern. In the Northumbrian glossaries on the gospels (eleventh century) "weorth" answers to "platea," "atrium," "street," "hall," or "court."

regarded as the centre of the "cote" district)—"Nethercote," "Parnacott," "Holnicott" are examples—seem to imply either a thickly-wooded or a somewhat desolate country, the "cotes" marking outlying hamlets, established at first for the cattle and swine-keepers of the colonists, and sometimes for the "beo-ceorl," or bee churl, an important person, whose duty it was to watch over and protect the nests of the honey-bees in the woods and around his own dwelling. But the termination "cote" is quite unknown in the south or the east of Devonshire; and we have to seek for some explanation of its great frequency in the north of the county. It is barely possible that it may mark an advance of English settlers west of the mouth of the Parret after the victory of Centwine in 682, or perhaps a slow and gradual inroad of the English after the victories of Ine. A "cote," if the immigration here had been conducted on the usual Teutonic system, would imply dependence on some larger settlement; but in the majority of cases the "cotes" of North Devon are quite isolated, and look like the establishments of single households. Again, in East Devon, a frequent and very noticeable termination is "hayne" or "hayes." These are both plural forms of "hege," a hedge; and their frequency must indicate either a very early series of enclosures by English settlers in that part of the county, or the existence of such hedges before their arrival. Hallam has remarked that the hedges of some parts of England are probably among the most ancient structures in the country. This is no doubt true; and the Devonshire haynes (we still talk of a field being "hayned up" when it is closed for hay) are perhaps early intakes from the common land of the settlement. In North Devon the word, if it occurs at all, is very rare; but there is here another place-name which is apparently confined to the county, and which may signify much the same thing. The "nymets," "nympts," and "nymptons," which occur along the stretch of country extending from Crediton to Barnstaple, are equivalent to the "newtakes" and "intakes" with which we are familiar on Dartmoor and Exmoor, and certainly imply an enclosure either from unclaimed country, or from the wild common of the "mark." The word is the participle of the verb "niman," to take, in which sense it is still alive in the slang dialect, whilst it was perhaps general in Shakespeare's time, who applies it to such a "snapper up of unconsidered trifles" as Corporal Nym. If we could really ascertain at what time and in what manner these intakes—the "haynes" and the "nymets"—were first made, we should have taken a great

step towards a better understanding of the English settlement in Devonshire. It is much to be desired that the earliest occurrence of the words, in charters or elsewhere, should be carefully noted. The "nymet," which now embraces Nymet Rowland and Bow, or Nymet Tracy, was a great enclosed district in 974, when the township of Coplestone was taken out of it.

But if English settlers established themselves in different parts of Devonshire, in the midst of the Britons, however peacefully the two races may have lived for a time side by side, the English power gradually but steadily increased, while the extent of the British kingdom as steadily diminished. We know that the Britons had never been altogether driven from Exeter in the days of Æthelstan; but the real struggle between the two races in the west was over long before. After the battle of Gafulford, in 823, the site of which has not been determined, the English frontier was probably extended by Egberht to the Tamar, and the English supremacy was certainly extended to the Land's End.* The fight is described as between the Weala (the Welsh) and the Defena (the men of Devon).† The Defena, of course, fought in the English interest, yet it does not follow that they were all of purely English race. But Britons and English in Devonshire must by that time have been, not perhaps welded into one people, but obedient to a common government, and living under common rulers. How far the two races really blended, whilst living in so close proximity, it is not easy to say; but there is strong evidence, in physical appearance, in local and personal names, and I think in character, that the connexion became tolerably close, and that the British influence on the Saxon incomers was by no means small. Mr. Arnold has endeavoured to trace a considerable Celtic element entering into and affecting certain divisions of later English literature and character. If he is right, it is not difficult to see that the peculiar qualities which he refers to the Celts have been present, not only in many of the most distinguished of our Devonshire worthies, but have had their share in modifying the general history of the county. The love of landscape and of natural beauty which has distin-

* FREEMAN'S *Norman Conquest*, vol. i. p. 43.

† "A.M. DOCCXIII. Her was Weala gefeoht and Defena at Gafulforda." There are two Devonshire Fulfords; one near Cridton, in the parish of Shobrook, (the old "Fulford" is now known as "Shobrook Park,") and Great Fulford, in the parish of Dunsford. The latter perhaps, close under Dartmoor, where the Weala may have remained in some strength, is the more likely site for the battle.

guished Devonshire poets like Browne and Carrington, and numberless Devonshire painters—at the head of whom stands Sir Joshua Reynolds, the backgrounds and accessories of whose pictures were, it is certain, greatly affected by his memories of Plympton and his early love for its scenery—is far more a Celtic feature than a Teutonic; and the vivid imagination and romance of the Celtic races combined, perhaps with the old northern spirit of sea-roving and adventure, to produce the Raleighs, the Gilberts, and the Hawkinses of Elizabeth's time, who, if they were influenced by the spirit of gain and of daring, were also led onward by not a little of the same romance as the Celts developed in the story of the mysterious voyage of St. Brendan.

At the foundation, therefore, of all the later history of Devonshire lies this mixture of Celt and Teuton, distinguishing the country between the Axe and the Tamar from almost every other part of England, and combining, with the isolation of the whole western peninsula, to give a character of their own to the movements and the aspirations of the "Defena." I have dwelt so long on this earlier period, which is certainly the most obscure, and that on which any fresh light would be most welcomed, that I can but briefly mention the chief points in the later history of the county. The position of Exeter, at the head of an important estuary, near the centre of the county, and strong in her natural defences, made her from the beginning not only the chief city of Devonshire, but the most important city of all the West. Exeter was as much the *clavis et repagulum regni*—the lock and key of the kingdom—on the west, as Dover was on the eastern side of England; and in all the landings, the risings, and the tumults which Devonshire history records, from its very commencement to the arrival of William III. in Tor Bay, the first object was to gain possession of Exeter, the great stronghold which, in the earlier centuries at any rate, commanded the whole peninsula. The story of the siege of the city by the Conqueror has been told by Mr. Freeman with such life-like detail as to leave little to be gleaned by those who may come after him. It must be read in the pages of his great history; and the place of Exeter in the general history of England was treated by him with equal care in the paper which he read before the Archæological Institute in 1873.* Here I will only say, that when,

* *History of Norman Conquest*, vol. iv. chap. 18. "The Place of Exeter in English History," in *Archæological Journal*, vol. for 1873. This paper is also printed in *Macmillan's Magazine*. Sept., 1873.

before the siege, "Exeter stood forth for one moment to claim the rank of a free imperial city, the chief of a confederation of the lesser towns of the west—when she, or at least her rulers, professed themselves willing to receive William as an external lord, to pay him the tribute which had been paid to the old kings, but refused to admit him within her walls as her immediate sovereign,"* the tendency was indeed at work in England "by which the kingdoms of the empire were split up into loose collections of independent cities and principalities,"† and it was the result of the isolation and comparative independence which had been affecting Devonshire not less than East Anglia. In the west, this tendency was stopped once and for all by the submission of Exeter to the Conqueror, and by the full establishment of his power by the rearing of the Castle on the Red Mount. But not the less, Devonshire, and Exeter as her chief city, have had a history of their own, and the men of Devonshire, whenever it was possible, have displayed a strong local feeling, and a pursuit of local objects which, carried on as they were by the main stream of events, nevertheless mark them out quite as distinctly as the East Anglians are marked out on their side. The siege of Exeter by Stephen, and the glimpse of the country westward to Plympton which we get from the chronicler of his time, show us that the west was then in the same condition as the rest of England—broken, unsettled, the only rule and the only law that of the stronger. But, as before, Exeter was the key of the country, and so she remained through the following centuries—through the Wars of the Roses, when the city was occupied now by one side, now by the other;—during the succeeding wave, marked by the appearance of Perkin Warbeck, when the insurgents, marching upward from Cornwall along ancient trackways which may have been trodden by the Conqueror's troops, flocked around Exeter, and after many assaults were compelled to take flight before the advancing army of the King, Henry VII.;—through what was known as the "commotion" of 1549, when the great mass of West-country folk rose, as Kett and his followers had just risen in Norfolk, again laid siege to the city, and again were driven from before its walls, but not until the siege had lasted for more than a month; and lastly, through all the changes of the civil wars, when, as I need not say, the white plumes of the Cavaliers alternated in the streets with the buff-coats and headpieces of Puritans who had fought at Naseby and at the taking of

* FREEMAN, "Place of Exeter in English History." † Ibid.

Bristol; and the stately figure of King Charles, once familiar to the citizens, was followed after a time by those of Fairfax and of "Lieutenant-General Cromwell."* The mixture of Celt and Teuton in the later race of the men of Devon, whatever additional qualities it brought with it, did not certainly impair the daring and the courage of their West-Saxon ancestors. "Such," writes Hooker in his account of the "commotion" of 1549, "was the valour and stoutness" of the insurgents who encountered Lord Russell on Clyst Heath, "that the Lord Grey reported himself that he never, in all the wars that he had been in, did know the like." They were fighting chiefly, as they thought, against the religious changes which had but lately been introduced; and it is noticeable, as illustrating the independence of the West, that whilst the followers of Kett in Norfolk made the inclosure of common lands their great grievance, this is dwelt on but very slightly by the insurgents of Devon and Cornwall. We have here, perhaps, an additional indication that such inclosures were of much earlier date in the West of England than in East Anglia, or in the southern counties.

Much remains to be gathered, from printed as well as manuscript sources, relating to the Civil War in the two western counties. It was full of incident; and the details, which remain almost unexplored in contemporary tracts, of which Mr. Davidson gives a long list,† and in private and unpublished letters, such as those of Sir Beville Grenville, would well repay the research of a diligent historian. There is an earlier period of Devonshire history, however, of which much less is known, yet of which much that is interesting might still perhaps be recovered. I mean the period of the Wars of the Roses. Many remarkable notices of the condition of Exeter and of Devonshire at this time occur in the records and documents belonging to the Municipal Corporation of Exeter, which have lately been examined and arranged by Mr. Stewart Moore. It is quite possible that the records of other towns—such as Dartmouth for example—might supply further information. Here in Devonshire, as indeed throughout the rest of England, the quarrel was scarcely one of principle. It became rather a struggle in which personal feeling was uppermost. The lesser squires and franklins followed, without question, the leading of the great lords to

* For the later period of the Civil War in Devonshire, and the proceedings of Fairfax's army, the great authority is the *Anglia Rediviva*; or, *England's Recovery* of Joshua Sprigg, first published in 1647, and re-printed at the Clarendon Press in 1854. Sprigg was one of Fairfax's chaplains.

† See the *Bibliotheca Devonensis*.

whom they had already been attached, and private feuds and animosities were indulged everywhere as opportunity offered. It is curious that for the most distinct picture of the lawlessness and confusion which the time produced in Devonshire, we should be indebted to one of the correspondents in the *Paston Letters*, letters which, I need hardly say, have to do for the most part with a part of England very far distant from our own. But a certain James Gresham, a lawyer living in London, writes thence, on the 28th of October, 1455, to "Maister John Paston at Norwich," with an account of disturbances in the west, and of the "gret varyanse bytwene ye Erll of Devenshure and the Lord Bonvyle."* These were the principal leaders in the west. The Courtenays were Lancastrian. Lord Bonville was a Yorkist. Nicholas Radford, belonging to an ancient Devonshire family, was a lawyer of great distinction, one of the "king's judges," and had been so closely connected with the Courtenays that Thomas Courtenay, eldest son of the earl, was Radford's godson. It would seem that in some way Radford had favoured, or had attached himself to, the party of Bonville, and that for this reason the Courtenays were determined to bring him to account. He was living at his own house of Upcotts, in the parish of Poughill, about seven miles from Crediton. Upcotts stands on a steep bank above a small feeder of the Creedy, in a broken, hilly country, where the hollows are filled with remains of old wood, and where from the higher ground, as from the terrace of Upcotts, the eye ranges over a wide stretch of hill and valley to the distant crests of Dartmoor. The house, with its moulded ceilings, its oaken staircase, its walled terraces flanked by huge old cypress trees, and overlooking what was once the bowling-green, shows that, fallen as it now is, it remained a place of some importance until at least the middle of the last century. But few portions can be of Radford's time, except perhaps some of the outer walls; and the inclosure of the main court may perhaps represent that which figures in the story—the usual accompaniment of a fifteenth century manor-house. It was on a dark October night that Radford's godson, Thomas Courtenay, coming from Tiverton Castle with sixty men-at-arms in his following, appeared before this outer court of Upcotts, of which the gates had been duly closed and secured. The place was strong enough to make an attack on it dangerous. Courtenay accordingly made his men set fire to a house

* Gresham's letter is the twenty-seventh in the first volume of the original edition.

outside the court wall ; and then, says Gresham, they "cried and mad an noyse as though they had be sorry for ye fyer, and by that cause Radford's men set opyn ye gats and yede owt to se the fyer." An easy entrance was thus obtained ; and Courtenay, passing into the "place," as the principal room in such a house was, and still is, sometimes called, "intreated Radford," in the words of John Paston's correspondent, "to come down of his chambre to speak with them, promitting him that he shuld no bodyly harme have ; upon which promise he came down and spak with the seid erll son." In the meantime the men-at-arms had dispersed themselves throughout the house, plundering whatever they could find ; and when Radford left his chamber, they rushed into it, "ryfled his huches"—an old word for the coffers of carved oak, which were the usual furniture of upper rooms—and trussing into bundles whatever valuables they could lay their hands on, they bound them on Radford's own horses, and prepared to carry off all together. "When," continues Gresham, "the yerll sone said, Radford, thou must come to my lord my fadir ;" and Radford, consenting, ordered one of his men to "make redy his hors," and was told that all his horses were taken away. "Thanne he seid to yerll son, 'Sir, your men have robbed my chamber, and they have myne hors that I may not ride with you to my lord your fadir ; wherefore I pray you lete me ride, for I am old and may not go.'" "It was answered him ageyn yat he shuld walke forth with them on his feete ; and so he dyde till he was a flyte shote (an arrow shot) or more from his place." Unfortunately the letter has here been injured, and only sentences are decipherable. Radford was old and feeble. His conductors allowed him at first to go "softly, for cawse he might not go fast ;" and he seems to have in some manner made his escape from them ; but he was soon recaptured. "Come nine men ageyn upon him," we are told, "and smot hym in the hed, and fellid [him, and one] of them kyt his throte." "This," concludes Gresham, "was told to my Lord Chanceler this fornoon of Seint Simon Day and Jude." It should be added that the chief actor in this savage scene, like the two leaders, the Earl of Devon and Lord Bonville, shared the fate of the chief supporters of either side. The godson of Nicholas Radford was beheaded in 1461, soon after his father, who lost his head in the same year, immediately after the battle of Towton. Lord Bonville was beheaded by order of Queen Margaret, after the battle at Barnard's Heath, near St. Albans, in February, 1462.

These are the chief periods in the history of Devonshire,

on which more light is to be desired, and for which a careful sifting and collecting of documents and authorities might possibly obtain much more. And here I might close this address were it not that one other subject seems especially to demand a few words from me. Since our last meeting the Association has lost, not only one of its own most valued members, but one of the few who connect it with the wider literature and the wider work of Great Britain; I might well say, of all English-speaking countries. It is only four years ago that Charles Kingsley (let me use that familiar name, it seems to say more to all of us than "Canon" Kingsley) addressed you at Bideford from the place which I have the honour to fill on this occasion, and expressed the delight which he felt at finding the Taw and the Torridge—the hills and the shores by which he wandered in his earlier days—still "unabolished," still as full of life and of sunshine as when he first knew them. It would indeed be unfitting if here, on the very border of what may be called his own country, almost within sight of Clovelly, and Hartland, and Lundy, the wooded valleys, the seas, and the rock-walls which he has invested with a new interest, and upon which it is now impossible to look without recollections of the glowing words in which he has painted them—it would indeed be unfitting if the Association were to meet on this occasion and at this place without giving one moment of recognition to the brilliant writer, the clear moralist, the ardent lover of science, whose great merits were never so fully felt as after he had been removed from among us. It was here, in this county, on these coasts, that he really "made himself" (to use an expression which was once applied to Sir Walter Scott's early wanderings in Teviotdale and on the Yarrow). To the border of Dartmoor, where he was born, and to this corner of North Devon, where his first years were spent, he always looked with a love and a longing which showed how deep had been his early impressions; and indeed, in writing the last chapters of his *Westward Ho!* he was but putting into words what had been haunting his imagination from his schoolboy days. Here we are not likely to forget what he has done for his and for our own county. Those who had the great privilege of knowing him personally will dwell with not less fond recollection on the sympathy which seemed to breathe from him, and which knit himself and his hearers—the great assemblage which hung on his words, or the chance companion in a country walk—for a time, at any rate, in the closest bonds. In his company all points of

difference seemed to sink away utterly out of sight; while those on which he was sure of the consent of all good men gathered new force and pertinence, and you left him refreshed and strengthened, as by a touch of the true "earth-mother." And if he was not perhaps profound as a man of science, he was a patient, loving, and accurate observer of nature; "strong in body," (to quote the description of a perfect naturalist in his own "Glaucus,") "able to haul a dredge, climb a rock, turn a boulder, walk all day, uncertain where he shall eat or rest;" above all, "gentle and courteous, brave, enterprising, and of a reverent turn of mind." Perhaps it is this last quality which most distinguishes the scientific discussions, and the applications of science made in his general writings, of Charles Kingsley. In every homely illustration, through every minute investigation, there runs a golden thread connecting the wonders of this visible universe with a profound reverence for and trust in its Creator and Upholder. *Benedicite, Omnia Opera Domino.* These are the words which seem to express his whole mind. "O all ye works of the Lord, bless ye the Lord: praise Him, and magnify Him for ever."

Obituary Notices.

COMPILED BY THE REV. W. HARPLEY, HON. SECRETARY OF THE ASSOCIATION.

(Read at Torrington, July, 1875.)

I.

C. H. CRESSWELL was one of the earliest members of the Association, having been enrolled at its inaugural meeting in Exeter in 1862. For forty-five years he was in the Post-office service, and during thirty-one years of that time his field of duty lay in the West of England, as Surveyor of the Western District. He retired from the Post-office in August, 1869; and although his release from public duty placed his time entirely at his own disposal, yet the state of his health precluded the possibility of his engaging, as he might otherwise have done, in active literary pursuits. During a great many years of his life he devoted his hours of leisure to scientific studies, but his reading was not confined or specially directed to any particular branch of science, nor does it appear that the results of his labours and reflections at any time found their way into print. Indeed his was one of those lives which, whilst exciting little interest in strangers, was precious and beautiful beyond measure to his children, and full of beneficial influence to all who knew him. He died at the Cottage, St. Julian's Road, Streatham, on the 20th of April last, having just entered his 70th year.

II.

JOHN HORN BROOK GILL, of Bickham Park, was one of the oldest and most noted of the inhabitants of Tavistock, having been identified with its commerce for about three-quarters of a century. He was the son of Mr. John Gill, of Ferrum Hill, who originally started the Tavistock Ironworks, and was connected with the construction of the canal, wharf, &c. He was younger brother of Mr. Thomas Gill, formerly M.P. for

Plymouth, and was head of the firm, Gill, Sons, and Co., of the Tavistock Bank. Mr. Gill was a magistrate, and deputy-lieutenant for Devon and Cornwall, and will long be remembered for the vigour with which he espoused a cause, either at the quarter sessions or in public meeting, his shrewdness on such occasions being remarkable. He joined the Association in 1867, during its visit to Tavistock. He died early on the morning of the 7th of October, 1874, at Bickham, in his 88th year.

III.

EDWARD GULSON was born at Coventry, November 13th, 1794. Up to the age of forty he took little part in public affairs, but in 1834 the discharge of important public duties devolved upon him. Previous to the passing of the Poor Law Amendment Act of that year, Mr. Gulson had for two or three years held the office of Guardian of the Poor at Coventry, which was a union under a local act. At that time the greatest mismanagement and extravagance prevailed throughout England in the administration of Poor Law relief, and the landowners were greatly burdened by the weight of the poor-rates. Mr. Gulson, in conjunction with another of the guardians, succeeded in effecting so complete a reform in the management of the union, that the poor-rates in the Coventry district were reduced to about one-half the amount of previous years. While affairs were in this state, a commission was appointed to enquire into the condition of the Poor Laws, and, with one or two other places, the Coventry district was found to contrast so favourably in its expenditure with the rest of England, that the attention of the Commissioners was directed to the energy and success of the two guardians in question; the result being, that on the passing of the Poor Law Amendment Act, in 1834, Mr. Gulson applied for and obtained the appointment of Assistant Poor Law Commissioner.

The first scene of his labours was the Berkshire district, where he formed the first union of parishes—Abingdon—under the new Act, January 1st, 1835.

In the course of his duties he found his practical experience at Coventry of the greatest service, and he proved himself so efficient in carrying out the provisions of the new Act, that he was sent to assist his colleagues in other districts. While stationed in Berkshire he enjoyed the honour of a personal interview with the late king William IV., and had the good fortune to meet with commendation from his majesty.

In 1836 the scene of his labours was transferred to the Lincolnshire district, where he formed many unions, and enjoyed the friendship of his Grace the late Duke of Rutland, who took a great interest in the Poor Law questions of that day.

In 1838 he accompanied the late Sir George Nicholls to Ireland, and assisted him in carrying out the provisions of the corresponding Irish "Poor Relief Act" of July, 1838. In Ireland, as in England, he formed the first Union—Belfast—January 1st, 1839, and was afterwards chiefly instrumental in forming all the new unions in Ireland. In April, 1843, Sir George Nicholls having left Ireland, his powers were delegated to Mr. Gulson and Mr. Power, another Assistant-Commissioner, and until the year 1846 these two gentlemen had the entire control of the Irish Poor Law Department.

In the latter year Mr. Gulson was obliged, by the state of his wife's health, to seek the genial climate of Devonshire, and he left Ireland. On the Commission being dissolved, in 1847, he was appointed Inspector of Poor-Laws for the Western District, which office he continued to hold until his resignation in December, 1868. In 1858 he went to reside at Teignmouth, and was appointed a Justice of the Peace for the county of Devon; and became a member, and ultimately the chairman, of the Teignmouth Local Board. In the year 1868 he met with an accident, which, coupled with advancing years, compelled him, after thirty-four years of service, to resign his office of Inspector of Poor Laws; and in 1871, on the death of his wife, he withdrew from all occupations of a public nature.

He became a member, and was elected a Vice-President of the Association at the last meeting, but he did not survive his year of office. He died on the 25th August, 1874, after five days' illness, at the advanced age of nearly eighty years.

IV.

The Rev. CHARLES KINGSLEY, Chaplain in Ordinary to the Queen and to the Prince of Wales, Canon of Westminster, and Rector of Eversley, was the son of the late Rev. C. Kingsley, who, some years after the birth of his distinguished son, became Rector of Chelsea, a fact of which the fruits are seen in the novel, *The Hillyars and the Burtons*, by Mr. Henry Kingsley. The future canon was, however, born at Holne, on the borders of Dartmoor, in 1819, during a temporary occupation of Holne by his father, in a house which no longer exists, but which stood on the site of the present vicarage.

A finer or more picturesque site—on the edge of a wooded ravine, with the Dart winding below, and grey tors rising steeply on the farther bank—can hardly be found even in Devonshire. But the earlier years of Charles Kingsley were not spent at Holne, and it was not from the scenery of Dartmoor that he derived his first impressions of natural grandeur and beauty. His father became vicar of Clovelly, on the north coast of Devon, soon after 1819; and it was during a boyhood and youth, passed amidst all the influences of the wildest seas and the noblest rock scenery on the English coast, and in close and familiar contact with the fishermen and country folk, whose quaint, old-fashioned character he could so well appreciate, that Charles Kingsley imbibed the passionate love for Devonshire and its scenery, its climate and its people, which constantly breathes out in his novels and essays. Devonshire was not, however, his family county. He was the representative of an ancient family of Cheshire, the Kingsleys of Kingsley, in the forest of Delamere, who were distinguished as long ago as the Parliamentary wars, when different members of their house served, first in the armies of Cromwell, and afterwards under Monk, in the struggle which brought about the restoration of Charles II. It is not a little interesting to note these facts, as in some sort affording a clue to the curiously-mixed character of the late canon—a character which was so eminently English in its respect for antiquity and for authority, and in its contempt for all authority which could not prove its own innate right to existence. Time went by, and in 1833 Charles Kingsley became a pupil of the Rev. Derwent Coleridge, at that time master of the Grammar School at Helston, in Cornwall. He was also for a short time, with his brother Henry, resident with the Rev. Thomas Drosier, vicar of Colebrook, near Crediton (hence the many references to Crediton in Henry Kingsley's stories); and an old woman in the parish remembers them as "two of the blessedest boys that ever was." The word is somewhat equivocal; but in this case it was intended to convey the most unqualified admiration. He was afterwards a student at King's College, London, and from thence was removed to Magdalene College, Cambridge. During his university career he was well known as a boating man, and as one of those who first began to take an interest in athletic sports, the pursuit of which, however, does not appear to have interfered prejudicially with his progress in more serious work, seeing that he contrived early to win a scholarship, to carry off more than one of the important

prizes, and to come out at last in the First-class of the Classical, and in the Second of the Mathematical, Tripos.

On first leaving Cambridge, Mr. Kingsley appears to have intended to study for the bar; but after a considerable time devoted to preparation for that profession, more serious impressions would seem to have been made upon him, and he devoted himself to the service of the Church, becoming curate of Eversley—that rural and picturesque parish in the moorland of Hampshire, and “the pleasantest home,” in his own words, “that God ever gave to an undeserving man”—of which, on the presentation of the late Sir John Cope, Bart., he afterwards became rector. There can be little doubt that the influence of the late Professor Maurice had much to do with this change of purpose. When Mr. Kingsley came to be ordained deacon, Mr. Maurice was in the zenith of his intellectual power, and the influence which he always exercised over younger men was perhaps greater than at any subsequent time. The first page of the first work which Mr. Kingsley gave to the world bears remarkable testimony to the influence which the chaplain of Lincoln’s Inn exercised over his intellect. He was but in his thirtieth year when he produced his *Saint’s Tragedy*, a dramatic setting of the story of St. Elizabeth of Hungary, which, although it has gone through several editions, has not received the attention it unquestionably merits. Later on in life he published some other volumes of verse, a tragedy, and some lyrics; and though he failed to attain the very highest place, he will always take a high rank amongst poets of the second order, his efforts in that direction evidencing a very high appreciation of the highest forms of poetry.

Always restlessly eager in philanthropic schemes, he came to the front in 1847 and 1848 as the advocate of the working classes, and unquestionably did much good, though not necessarily always in the best way. Mr. Maurice’s schemes of “Christian Socialism” seem to have excited his ardent admiration, and he gave of his best for their advancement. The grievous wrongs and sufferings of the journeymen tailors of London at the hands of the class of employers known as “sweaters” attracted his attention, and with characteristic energy he threw himself into the work of securing for them attention and redress. The first of his novels was devoted to this subject. In the hands of a writer untouched by the live coal from the altar of genius, such a hero would have excited little interest; but Mr. Kingsley’s *Alton Locke* had a very remarkable success. On all sides the story of the lame

tailor's apprentice, with its remarkable episodes of life in the shops of the sweaters, and in the hideous fever-dens in which these slaves of a certain small section of the London tradesmen had their habitation, was received with something approaching to enthusiasm. What was perhaps of more importance was, however, the fact that its author was able to carry out a philanthropic scheme for the amelioration of the condition of these unhappy drudges, the effects of which have even now not ceased to exist. The crusade against the cruel and iniquitous "sweating" system which Mr. Kingsley begun has been wholly successful, and at the present time the working tailors of London are probably as well off in their way as the working-men of any other trade in theirs; and although Parliament has stepped in to confirm by force of law the reforms which Mr. Kingsley urged, public opinion had under his inspiration practically done the work.

After the publication of his first novel, Mr. Kingsley seems to have glided off into a more purely literary groove than that which he had up to this time occupied. In 1852 he produced *Phaethon; or, Loose Thoughts for Loose Thinkers*, perhaps the most appropriately-named of all his works. The following year was marked by the appearance of *Hypatia; or, New Foes with an Old Face*. It is probable that no novel ever went through a severer ordeal of criticism than this; and it is no small testimony to its genuine merits, that, in spite of its admitted faults, it still maintains its ground with the reading public. The time chosen is one of which very few "general readers" know anything; the subject—the Church of Alexandria in the fourth century—is far from being one of a popular kind; while the theological character of much of the writing is to novel-readers eminently unattractive. And yet the book sells with singular readiness even now; and there are certainly few readers, especially amongst the young, who content themselves with a first perusal. The studies which had led Mr. Kingsley to the production of this novel resulted also in a volume of lectures, published in 1854, and entitled, *Alexandria and her Schools*.

The most genuine and spontaneous of Mr. Kingsley's books are doubtless the novels of *Westward Ho!* published in 1855, and *Two Years Ago*, published in 1857. By these he will be remembered when *Hypatia* is forgotten, and when the story of *Hereward the Wake*, and the lectures on Alexandrian Religion and Philosophy, and the Holy Roman Empire, have long ceased to attract attention. There has seldom been a fresher, more exciting, or more delightful novel than the story of *Sir*

Amyas Leigh; and it is no small testimony to its merits, that boys delight in it more than anything else which its author produced. *Two Years Ago* was perhaps hardly so successful, but maturer judgments will perhaps be scarcely disposed to maintain that it did not deserve to be. Tom Thurnall, the hero, is an admirably-conceived character; and the mystic maiden who fills the part of heroine is hardly less admirably drawn. In both novels it will possibly be objected that the plot is somewhat feeble and confused; but the fact remains, that their publication has had the effect of doing for Devonshire, and especially for North Devon, pretty much the same thing as was done by Sir Walter Scott for the Highlands. The charm was completed by the publication of the *Miscellanies*, a collection of essays from *Fraser's Magazine*, which appeared in 1859, and which have undoubtedly sent thousands of readers "Westward Ho!" in search of the lovely country which Mr. Kingsley has so lovingly and so ably described.

Too much time and space would be consumed were we to remark at length upon all the writings which issued from Mr. Kingsley's prolific pen; suffice it to mention, that besides the above-mentioned works, he gave forth in 1863 *The Water Babies*, a satire of no common power, and irradiated with a rare amount of humour; *The Roman and the Teuton*, lectures delivered at Cambridge in 1864; *Hereward, the Last of the English*, in 1866; *The Hermits*, a little book which is in its way a model of style and condensation, in 1867; *How and Why?* in 1869; *At Last: a Christmas in the West Indies*, one of the most graceful pieces of purely descriptive writing in the English language, in 1871; and various volumes of sermons.

He was appointed Professor of Modern History in the University of Cambridge in 1860; and after resigning that post, was made Canon of Chester in 1869, and a few months before his death Canon of Westminster.

Mr. Kingsley, however, did not concentrate the great powers of his mind on literature exclusively; he was a man of considerable scientific attainments. His love for Natural History and Botany, which he first drank in during his youthful rambles by his father's side among the rocky slopes of Clovelly, led him to prosecute his researches in those and kindred subjects; and he became a Fellow of the Linnæan, as well as of the Geological, Society. He was elected President of the Devonshire Association in 1871, and the old haunts and familiar places were visited by him with the

greatest delight when he presided at the meeting at Bideford, and addressed his audience "with a sigh of relief" at finding "still unabolished the Torridge, and the Hubbastone, and Instow, . . . and the beloved old Braunton marshes and sand-hills." He filled the office of a Vice-President in the following year, and in 1874 was elected an Honorary Member of the Association.

At the close of last year he was seized with a painful and protracted illness, which at last ended as his friends and those about him most feared. In but little more than middle life, he succumbed to pulmonary disease. On Saturday, the 23rd of January, 1875, at noon, he passed quietly away, to the grief of his relatives—to the grief not less of the thousands of readers who have learnt from him to appreciate much that was best in the literature of the day. It certainly is no flattery to say that the late Canon of Westminster was one of those who have left a very distinct impression on the men and books of his time. The occasional eccentricities which disfigured them, will speedily be forgotten. The peculiar social theories to which he lent his support will die out, as all such things do die. The blunders of which he was so savagely accused by critics of a certain school will have wrought their own refutation. The net result will be, that his influence has been one of almost unmixed good, and that few men have of late years gone to their rest with greater regret from their fellows, and more genuine regard and esteem from the world at large. He was admirable in the open air. He could tie a fly with the most accomplished of salmon fishers; he had a marvellous eye for the picturesque, a keen sense of humour, and an infinite store of good sense. All that we encounter in his writings is manly, honest, straightforward, couched in strong and nervous English, and wholly free from those lines which, dying, their author "would wish to blot." But he was at no time an extraordinarily profound student, and in recalling his work we are compelled to own that not a little of his erudition seems to have been got up for the occasion. This one fact, however, by no means neutralizes the real genius which illuminates his works, and which has maintained their popularity in spite of criticisms often severe, and sometimes not unmerited.

V.

JOHN PARSON was a son of Captain John Parson, R.N. He passed the earlier part of his life at Teignmouth, until he entered into practice as a solicitor in London. A few years

since he retired from this profession, which he had carried on with great ability and success. He then devoted his energies to promoting the welfare of Teignmouth, where, as chairman of the Local Board, and in connection with other public bodies, his business habits and activity were directed to the general management and improvement of the town. He joined the Association, and filled the office of Vice-President at the meeting at Teignmouth last year. He died at his residence at Bitton, December 6th, 1874, in the 59th year of his age.

VI.

SIR EDMUND SAUNDERSON PRIDEAUX, Bart., of Netherton Hall, in this county, was the second son of Sir John Wilmot Prideaux, seventh baronet. He was born in the year 1793, and succeeded his brother, Captain Sir John Wilmot, B.C.S., the eighth baronet, in 1833. He entered the 53rd Regiment in 1813, rose to the rank of Major in the army in 1831, and retired in 1837. Having been so many years in the profession of arms, he took great interest in the Volunteer movement; indeed he was connected with the origin of that movement. The first attestation of the Volunteers took place at Honiton on the 6th October, 1852. The Queen's acceptance of the services of the first two companies formed is dated December, 1852; and the first entry in the Order Book—January 21st, 1853—reports the appointment of Sir Edmund Saunderson Prideaux as Major-Commandant. Early in 1860 Sir Edmund became Lieut.-Colonel, and in February, 1862, was created Hon. Colonel. Thus, during the first nine years of the existence of the corps, the deceased baronet performed the duties of commanding officer, and that at a time when the Volunteer movement, though an accomplished fact, was not regarded with much favour by, and received little or no assistance from, the Government. But the energy, not less than the urbanity, soldierly bearing, and kindness of heart of the late Colonel, enabled him to overcome all the difficulties of his position, and to leave the immediate command of the battalion to his successor when it was in a fixed and flourishing condition. To the last he took deep interest in the force, and corresponded regularly upon its prospects and condition with some of his old brother officers. He was a deputy-lieutenant and magistrate of the county, and before the infirmities of age rendered him a comparative invalid he took an active share in county business; in fact, he took interest in all that concerned the honour and welfare of Devon, and performed the various

duties of his position with a manly frankness that won for him general esteem. He was a hearty country gentleman, generous to the poor, ready to do a good turn to any one, and no one ever came to Netherton Hall in distress, and was sent empty away. His connection with the Association commenced in 1868, on the occasion of its visit to Honiton.

Though he was four times married, he left no issue, and no inheritor to the title. The baronetcy was created in 1622, the first Sir Edmund being an eminent lawyer of the period; and the family was one of the oldest in the West, having been settled in Cornwall before the Conquest. He died at Torquay, at a ripe old age, on Wednesday, the 10th February, 1875.

VII.

ALFRED ROOKER was born in April, 1814, at Tavistock. His family was of Dutch origin, the immediate ancestor being one of the followers of William of Orange, who landed with him in Torbay in 1685, and settled in England. The name was originally spelt Rucker. Mr. Rooker himself, though in the truest sense of the word a self-educated man, had the advantage in his early years not only of the training of his father, an Independent minister, but of the teaching of the Rev. Wm. Evans, then minister of the Abbey Chapel, Tavistock, a scholar of no mean repute, and one of the foremost of the literary and scientific men of that town. Religion and Nonconformity were with Mr. Rooker traditional inheritances. But in the quiet country town of Tavistock, surrounded by the solemn grandeur of Dartmoor, he caught something more than a tradition of religious life. Nature endowed him richly with the instinct of veneration, and we can well understand how the peacefulness of the minister's home, and the awe-inspiring solitudes of those silent hills and far-reaching moors, trained and strengthened this faculty. Physical and mental advantages equally great accrued from this early training. A robust and vigorous constitution, and an active, well-balanced mind, were the priceless endowments added. Choosing the profession of a solicitor, his mental capacity and unflagging industry soon brought him to the front rank of the lawyers of the town of Plymouth, where he settled.

It is a noteworthy fact, as indicating the manner in which Mr. Rooker's high qualities were appreciated in the town of his adoption, that he was made a member of the Corporation without passing through the ordeal of popular election, being

chosen Alderman at once, and never sitting for any ward. There was not a single work which had for its object the advancement of the town with which he was not connected; there was not a social, religious, or philanthropic movement calculated for this end which he had not made his own. He was honoured, esteemed, and loved by all in the town. The best energies of his life were devoted to such institutions as the South Devon Hospital, and to the work of education, not only at Sherwell Schools (of which he was superintendent) and the Western College (of which he was secretary for many years), but also on the School Board, at the meetings of which he was an unfailing attendant. He was assiduous in the discharge of his duties as Alderman, and for many years was leader of the political party in the borough to which he was attached. On the vacancy caused by the elevation of Sir Robert Collier to the office of one of our Judges of Appeal, at the last general election he was a candidate for parliamentary honours as one of the representatives of Plymouth, but failed to secure a majority of the votes of the electors. It is a forcible illustration of his character, that even the exciting scenes and the keen disappointment of the day when Plymouth rejected his claims to parliamentary honours did not prevent his occupying his accustomed place at the weekly service at his chapel in the evening.

Possessed of unusual mental gifts, Mr. Rooker cultivated them with the same unwearying industry which marked his whole conduct. It was a matter of astonishment to those who knew the multiplicity of the claims on his leisure, how he contrived to keep fairly abreast of the intellectual culture of his times. He became a member of the Plymouth Institution in July, 1837, and rarely failed from that time forth to deliver one or two lectures a session. In 1842 he was a Vice-President; in 1852 he was elected President of the Society, an office which he filled on one or two other occasions; and at the time of his death he was one of the trustees. His first lecture at the Athenæum was delivered in December, 1837, on "International Law;" and the subjects of his subsequent lectures, which indicate a wide range of sound reading, and much original thought, are: 1839, "International Law," second; 1840, "Ancient Forensic Oratory," two; 1842, "The Prose Writings of Milton," and "Judicial Proceedings among the Anglo-Saxons;" 1843, "Milton's Minor Poetry," and "The British Association at Cork;" 1844, "Lunacy: its Legal Incidents," two; 1845, "Rise of the Italian Republics;" 1846, "The Decline of European Literature, and its Revival in the

Middle Ages;" 1847, "On the Philosophical Fictions of Sir Thomas More, Bacon, and Swift;" 1848, "Civilization in the Reign of Elizabeth;" 1849, "Alfred and the Anglo-Saxons;" 1851, "The Koran and its Sequences;" 1852, "The Poetry of the Old Testament Scriptures;" 1854, "Magna Charta and its Results," and "Landmarks of the Constitution;" 1855, "English Liberties: their Founders;" 1856, "Introductory Address," and "Thomas Fuller;" 1857, "India;" 1859, "English Parliaments: their Origin and History;" 1861, "Enigmas of History," and "Rise of the Italian Republics;" 1862, "Lord Macaulay's Speeches;" 1863, "Slavery in the United States: a History;" 1865, "Federal Governments;" 1866, "Ancient Books;" 1867, "Andrew Marvell;" 1868, "The Pyrenees;" 1869, "Bases of History;" 1870, "The Canadian Year-book;" 1871, "Literature from the Eighth to the Twelfth Centuries;" and 1873, "Sanitary Legislation." His last lecture at the Athenæum was on the local histories. Local history was a subject to which he had paid considerable attention, and he had on various occasions examined the local records on behalf of Mr. Hepworth Dixon and other well-known writers on historical subjects. Probably most of these lectures—as by the rules of the Society they must be read—remain in MS. This would not be so with many of the lectures delivered by Mr. Rooker at the Mechanics' Institute and kindred places, which were chiefly extemporaneous. His latest were descriptions of his travels, and were exceedingly popular. Mr. Rooker wrote several articles in magazines, &c.; but it does not appear that he published anything separately, except "The Literature and Literary Men of Plymouth," 1845; a lecture "On the Ejection of the Two Thousand Ministers in 1662," and one delivered at the outbreak of the American Civil War, entitled, "Slavery in America: Does it Answer?" He was one of the original members of this Association, having been present at the preliminary meeting when the Association was formed, and he attended several of its earliest meetings.

Mr. Rooker's fame as a speaker extended throughout and far beyond the West of England. His speeches were remarkable not merely for their solid basis, their richly ornate and picturesque style, with its fecundity of illustration and felicity of epithet; but for their flowing force, and the grace with which they were delivered. Fulness of thought made the construction occasionally involved, but the silvery tones and perfect intonation of the speaker rendered them to the hearer always clear. Mr. Rooker was a born orator, and had the skill to use his natural gifts to the best advantage. Some of

his most striking speeches live only in memory, or are but imperfectly recorded. He was rarely more forcible, for example, than when he justified his conduct in leaving his Liberal friends at the election of 1853, and in supporting the present Lord Selborne, because in his conscience he held character above party.

His last year was his most brilliant one. As chief magistrate, standing side by side with the heir to the British throne, with a culture, a courtesy, a thorough acquaintance with all that society demanded, he did on that day, when that building, the new Guildhall, the erection of which he had at heart so long, was finished, that which would for ever be an honour to him and the town.

He had long desired to visit the land where the Great Master trod. When his year of office was past he prepared to go, and on the 3rd of December last, accompanied by his wife and two daughters, he quitted the shores of England. After visiting numerous places in Egypt and Palestine of historical interest, on the 22nd of May, while journeying between Damascus and Baalbek, and near the latter town, he began to display symptoms of Syrian fever. The disease rapidly developed at Baalbek. Great sympathy was manifested, and on Mr. Rooker expressing anxiety to push on to Beyrout, eight men bore him on their shoulders in a litter through the day to a point where the horse-diligence to Beyrout was met. At that town he was attended by the resident English surgeon, and was surrounded by every comfort. Nothing could exceed the kindness manifested by the hotel attendants, and his wife and daughters were, of course, constantly by his side. There was occasional delirium, but the patient was during the greater part of the time perfectly calm and collected. For a day or two, on the 24th and 25th especially, he seemed to rally, and hope predominated over fear. But this was succeeded on the following day by more acute symptoms, and the American physician, who had been called in for consultation, gave but faint hopes of a favourable issue. He died at midday on Thursday, the 27th of May.

VIII.

W. K. SPRAGGE, long resident at the Quarry, Paignton, was well known for the interest and zeal he displayed in promoting the study of Natural History. By careful and laborious efforts he succeeded in collecting a valuable series of insects, which, in 1846, he presented to the Torquay Natural History

Society, thus laying the foundation of the rich and extensive Entomological Collection now possessed by that society. He was one of the founders of the society itself, and had long been a proprietary and life member. He became a member of this Association in 1864. He died at his residence at Paignton, October 7th, 1874.

IX.

Colonel TIMINS joined the Association at Bideford in 1870, and was present at every subsequent annual meeting until his decease. For many years of his life he was engaged in active service in the Indian army, and on his retirement he took up his residence at Torquay. In 1864 he became a member of the Torquay Natural History Society, and from that time continued to manifest an invariable and lively interest in its welfare, having served on its Committee for several years, and filled the office of Vice-President in 1869-70. He was also a leading member of the Sub-Committee, charged with the arrangements for the annual conversazione of that society, and by his zeal and judgment, as well as by his geniality, contributed very largely to the acknowledged success which has attended those pleasant assemblies. He was one of those named by the Council of this Association to be invited to be a Vice-President in 1876. He died at Torquay, March 2nd, 1875.

MISCELLANEOUS DEVONSHIRE GLEANINGS.

PART I.

BY W. PENGELLY, F.R.S., ETC.

(Read at Torrington, July, 1875.)

I.—WILLIAM PRINCE OF ORANGE IN DEVONSHIRE.

[*COLONEL MORGAN CLIFFORD of Torquay was so good as to call my attention a short time ago to a pamphlet of 38 pages, in his rich library, entitled] “A Third Collection of Papers relating to the present Juncture of Affairs in *England*. *The Second Edition*. Licensed and entered according to Order. *London* printed, and are to be sold by *Richard Jane-way* in Queen’s-head-Court in *Pater-noster-Row*, 1689.” [The papers are four in number, and as the first two connect themselves with Devonshire, Col. Clifford was so good as to lend me the pamphlet with permission to copy any portions of it which it might appear desirable to print in the Transactions of this Association.

The first paper, entitled] “The Expedition of the Prince of Orange for England; giving an account of the most remarkable passages thereof, from the Day of his setting sail from Holland, to the first Day of this Instant December,” [occupies rather more than seven of the pages, reaching Devonshire near the bottom of the third page and continuing thence to the end.]

“About five in the Morning,” [says the writer,] “we made the Start, the Wind chopping about to the *Westward*; upon which we stood fair by *Dartmouth*, and so made for *Tor-bay*, where the Prince again ordered the whole Fleet into the same posture as at *Dover* and *Callis*.

“Upon his Arrival at *Tor-bay*, the People on Land, in

* [Every thing within brackets is editorial; all else is from the sources quoted.]

great numbers, welcom'd his Highness with loud Acclamations of Joy.

"Immediately after the Prince gave two Signals, that the Admirals should come aboard him, which they did; and then order'd, that the whole Fleet should come to an Anchor, and immediately land; and further ordered, that the Admirals should stand out at Sea as a Guard, as well as the smaller Men of War to attend and guard their Landing; and also order'd six Men of War to run in to guard *Tor-bay*.

"The Prince then put out a Red Flag at the Misen-yard-arm; and provided to land in sixty Boats, laid ready for that purpose: Upon which the Prince signified, that General *Mackay* with his six Regiments of English and Scots should first land; and also, that the little *Porpus* with eighteen Guns should run a-ground to secure their landing: But there was no Opposition; for the People bid us heartily Welcome to *England*; and gave us all manner of Provisions for our Refreshment.

"The fifth of *November* (a Day never to be blotted out of the Englishman's Heart) the Prince caused to be landed about 2000: The Country bringing in all manner of Provision both for Man and Horse, and were paid their Price honestly for it.

"The Prince the same Day commanded Captain M—— to search the Lady *Cary's* House, at *Tor-abbey*, for Arms and Horses; and so all other Houses which were Roman-Catholicks. The Lady entertained them civilly, said her Husband was gone to *Plymouth*: They brought from thence some Horses, and a few Arms, but gave no further Disturbance to the Lady or her House. Nor shall it be forgotten, what was faithfully acted at this Lady's House, immediately on our arrival at *Tor-bay*: There was a Priest, and some others with him were upon a Watch-Tower to discover what our Fleet was, whether French or Dutch: At last they discovered the White Flags on some of our Men of War; the ignorant Priest concluded absolutely we were the French Fleet, which with great impatience they had so long expected; and having laid up great Provisions for their Entertainment, the Priest ordered all to the Chappel to sing *Te Deum* for the Arrival of their supposed Forces; but being soon deceived, on our landing, we found the benefit of their Provisions; and instead of *Vostre Servitude Monsieur*, they were entertained with *Yeen Mijnhere, Can you Dutch spraken?* Upon which they all ran away from the House, but the Lady and a few old Servants.

“Presently after the Prince of *Orange's* landing, he sent a *Quince* to the Earl of *Bath*, which was supposed to intimate his coming in to him.

“The whole Army, to the best of my knowledg, consisted of about 20000 Horse and Foot, Volunteers, &c. The News of the Prince's landing was brought to the City of *Exeter* by several Expresses to the Earl of *Bath*; they landed all their Horse first of all, and after that the Foot, all the Army being ashore by Tuesday Three of the Clock in the Afternoon, all their Baggage, Provisions, and Ammunition being sent about for *Topsham*, where they were brought up by Water to this City, there was abundance landed with the Prince at *Tor-bay* for present Service in case they should need it. The Wednesday, being the 7th curreant, one Captain *Hicks* came to Town (who is the Son of that worthy Divine Mr. *John Hicks* the N.C. deceased) and as soon as he came, the Mobile in very great numbers flocked to him to list themselves in the Service of the Prince of *Orange*, which the Mayor hearing of, sent for him and questioned with him, whether he had a Commission for what he did; but he would produce none, nor give any account of the Prince's Design, upon which he was committed to Prison; but the Concourse of People was so great about the Guild-Hall, that they would not suffer him to be carried away, so he remained there till next day in the Custody of two Constables, and was very nobly provided for by the Mayor; Thursday the Lord *Mordant* with three or four troops of Horse came to Town, and Dr. *Burnet* with him, and when they came to the Gate of this City, it was shut against them, upon which the Lord *Mordant* commanded the Porter to open the Gate on pain of Death, which was presently set open, and being open, required him on the same penalty not to shut it again: as soon as they were entered, the Lord *M.* went to the Hall, and set Captain *Hicks* at liberty, and inquired of his Usage, who gave the Lord *M.* a very large Character of the Mayor's Civility and Respect to him, upon which there was a Guinea given those that waited on him; that afternoon the Lord *M.* and Dr. *Burnet* waited on the Mayor to know if he would meet the Prince at the Gate, and govern the City under him? which he excused, and told them he was under the Obligation of an Oath to his Majesty, and therefore desired the Prince would lay no commands on him that should be prejudicial to his Conscience, and after some debate of the Matter they departed. All the Thursday they kept coming to Town; the Friday the Prince came with his Guards, and were marching into, and

some through the City to places adjacent about three hours without ceasing, and more or less they came in still until Night; Men better hors'd I never saw in all my Life.

"On Saturday, Sabbath-day, Monday and Tuesday the Main Body of the Army came, and most of them (only some few Regiments of Foot) marched to *Tiverton, Collumpton, Honiton, &c.* and to the Neighbouring Parishes, and the Foot to *Clist-heath*, where they incamped and pitched their Tents. The Bishop fled, and is come for *London*, and is made Archbishop of *York*; the Dean likewise withdrew, (but returned to the Prince after a few Days Consideration) whose House the Prince took for his Lodgings.

"On the *Lord's-day* Dr. *Burnet* preached at the Cathedral on the four last verses of the 107th Psalm, (*He poureth Contempt upon Princes, and causeth them to wander in the Wilderness, where there is no way. Yet setteth he the Poor on high from Affliction, and maketh him Families like a Flock. The Righteous shall see it, and rejoice; and all Iniquity shall stop her Mouth. Whoso is wise, and will observe those [sic] things, even they shall understand the loving-Kindness of the Lord.*) Wherein he observed the wonderful Providence of God towards them in the whole Conduct of Affairs in this Undertaking, and how they intended to have landed the 4th of *November*, if it had been possible, it being the Prince's Birthday, and the Day of his Marriage to the Princess, but they could not possibly make to Land, and so could not get the Shoar till the fifth, *That England's Deliverance might be begun on the same Day that it was formerly designed for Ruin and Destruction.* On Monday all the Canons that were in Town were summoned to appear in the Quire, and like wise the Singing-men, when after they had sung *Te Deum*, Dr. *Burnet* read the Prince's Declaration, and after the Declaration, a short Prayer for the Success of the Prince, and so departed. There was not one of the Canons appeared; and when the Declaration was reading, the Singing-men went away, they being commanded in the service to forbear praying for the Prince of *Wales*. Monday Captain *Burrington*, who lives by *Crediton*, came to the Prince and offered him his Service, who was very kindly received by Him; after that every day the Gentry from all parts of *Devonshire, Somersetshire, &c.* flocked to him in great numbers, it would take up too much time to name them, few absenting themselves, and those that did, there is great notice taken of them; they have entered into an Association to stand and fall with the Prince; several Lords came to him while here, as the Lord *Colchester*, the

Lord *Abbingdon*, the Lord *Cornbury*, the Lord *Shrewsbury*, &c. It is incredible to tell you what they have brought with them, except you saw it, there being 200 of their Ships come into the River of *Topsham*. *Plymouth* Fort is surrendered to the Prince by the Lord of *Bath*, and the Lord *Huntingdon*, and the Popish Officers that were therein with Father *Turner* are seized and secured, and the Popish Souldiers are discharged; and coming hither and owning themselves such, are committed by Mr. *Seymour*, who is made our Governour, and one Major *Gibson* Deputy Governour. There are several thousands of Souldiers that have listed themselves, and many thousands more would have done the same, but the Marschal *de Schomberg* told the Prince there was no need of them, so were dismiss again. They have a vast treasure with them, I am certainly informed of fifty waggons loaded with Cash. They have landed about one hundred and twenty Field-Guns, several of which remain still here, the other are gone with the Prince. The last News we had was, that the Prince was at the Earl of *Bristol's*, which is by *Sherborn*, where we are informed, that Prince *George*, the Duke of *Grafton*, the Lord *Churchill*, and Colonel *Trelawny* met him, and that the Prince saluted them in the words of *David* to the Men of *Judah* and *Benjamin*, 1 Chron. 12. 17. *If ye be come peaceably unto me to help me, mine Heart shall be knit to you; but if ye be come to betray me to mine Enemies, seeing there is no Wrong in my Hands, the God of our Fathers look thereon, and rebuke it.* And they replied in the words of *Amasai* in the eighteenth Verse, *Thine are we, David, and on thy side, thou Son of Jesse: Peace, Peace be unto thee. Then David received them, and made them Captains of the Band.* The Prince at his going from hence, gave the Mayor this Character, That he was worthy to be trusted, for being faithful to his Trust."

[The Second Paper is entitled] "*A further Account of the Prince's Army, in a Letter sent from Exon, dated Nov. 24.*" [It occupies about half of the eighth and the whole of the ninth page of the pamphlet, and is as follows]:—

"Had I not insensibly over-slipt my Time the last Post, you had received this then: When I came here, I endeavoured to inform myself, after the best manner I could, as to the Number and Quality of the Prince's Army, and all generally concluded them to be about 20000, all pick'd Men, and many of them personally present at the Siege of *Buda*. This I am certain of, that they appeared to be Men resolute, well disciplined, and stout, and some of them of an extraordinary

Stature, and their Arms suitable, Musquets, Swords, and Pikes, being far larger than ever I yet saw; and notwithstanding the Streets were thronged almost as thick as yours on a Lord-Mayor's Day, and some of them were, I am confident, six Foot and a quarter, if not six foot and an half in height: So that were it lawful to trust in an Arm of Flesh, they might have some cause to presume; but the tenour of their words were otherwise, their civil Deportment, and their Honesty of paying for what they have (and the strictness of their Discipline hinders them from being otherwise), winning not a little the Affections of the Country-men, who daily resort hither, forty or fifty in a Gang, to be Listed. My Lord *Mordant's* Regiment was soon compleated, which with two others, was raised and maintained at the Charge of the Gentry of this Country, of which *Edward Seymour Esq.*, is by the Prince made Governour. During his Highness stay here, which was till last *Wednesday*, there appeared a Court most splendid, composed, not only of Foreign, but many of the English Nobility and Gentry, which came hither to wait on his Highness since his Arrival, of both ranks, upwards to the number of Sixty, all mighty Gallant in their Equipage, each striving thereby to add to the Glory of their Design. The Gentry of these Parts first seemed slow in their Advances to serve the Prince; but as soon as the Ice was broke by Capt. *Burrington*, the majority soon followed his steps, and have entered into an Association. It is to admiration to consider the vast Magazine of all Warlike Utensils, brought hither by the Prince's Army, their Baggage having for a Fortnight together been continually Landing, and yet not fully ended: Were it not for the badness of the Roads, as I was informed by a private Sentinel, they could draw into the Field an Artillery of above 200 Pieces: But the greatest Curiosity I yet saw, was a Bridg of Boats, such as I conceive the *Imperialists* use to pass over the *Danube* and *Save* with, which was for the speedy conveyance of the Carriages, laid over the River in two or three Hours, and afterwards as soon removed; not to mention a Smith's Shop or Forge, curiously contrived in a Waggon; or another Contrivance the Foot carry with them to keep off the Horse, which in their manner may well yield the Service of a Pike.

"There hath been lately driven into *Dartmouth*, and since taken, a *French* Vessel loaden altogether with Images, and Knives in a very large proportion, in length nineteen Inches, and in breadth two Inches and an half; what they were designed for God only knows."

[Whilst reading the foregoing papers I noted down such thoughts as presented themselves, and these I venture to introduce here by way of conclusion :—

Though the first paper is neither dated nor signed, the title shows that it was written in December, 1688.

The writer commences with the first person, but subsequently, without hint or warning, changes to the third. At first it is "*We* made the Start," "*We* stood fair for Dartmouth," "The people bid *us* heartily welcome to England, and gave *us* all manner of provisions for *our* refreshment;" but no sooner had "*we* found the benefit of their provisions" at Tor Abbey than the writer states of the Prince's party that "*They* landed all their horse first of all," "*They* kept coming to town" (i.e. Exeter), "It is incredible to tell you . . . what *they* have brought with them."

The statement that "The people (of Brixham) bid us heartily welcome to England, and gave us all manner of provisions," recalls the often-told story that the following address was presented to the Prince by the inhabitants of the well-known Torbay fishing town :—

"And, please your Majesty King William,
You're welcome to Brixham Quay
To eat buckhorn and drink bohea,
Along with we,
And please your Majesty King William." *

The visit to Tor Abbey is mentioned by Mr. Blewitt, in his "Panorama of Torquay," where it is said to have been on the 7th of November, whereas the author under notice says it was the 5th.] "In the Harleian Miscellany, vol. i. p. 449," [says Mr. Blewitt,] "the following anecdote is related by one who was present in the fleet; 'nor shall it be forgotten that there was a priest and some others upon a watch tower (at Tor Abbey) when we arrived at Torbay, to discover what our fleet was; and discovering white flags on some of our men of war, the ignorant priest concluded we were French, which they had so long expected with great impatience, and having laid up great provisions for their entertainment, the priest ordered all the chapel to sing *Te Deum* for the arrival of their forces. But being soon undeceived on our landing, we found the benefit of their provisions; and instead of *Votre serviteur, Monsieur*, they were entertained with *Yeen Mynheer, can ye Dutch spraken?* Upon which they all ran away from the house, but the Lady Cary and a few old

* See ["The Panorama of Torquay." By OCTAVIAN BLEWITT. Second Edition, 1832, p. 26.]

servants." [It will be observed that the two anecdotes though essentially the same, and obviously copied from the same original, do not strictly agree. There can be no doubt that the word *undecieved* which occurs in Blewitt's version is the correct reading, and not *deceived* as in the corresponding place in Colonel Clifford's pamphlet.

The paper was certainly written at Exeter. Thus, "They were brought up by water to *this city*," "One Captain Hicks came to *town*," "When they came to the gate of *this city*," &c. &c.

From the fact that the writer speaks "of that worthy Divine, Mr. John Hicks the N[on]C[onformist] deceased," it is not improbable that the writer was himself a nonconformist, for Mr. Hicks was much too pronounced a theologian to be called "a worthy divine" except by one of his own party. He was born near Thirsk, Yorkshire, in 1633; became minister of Stoke Damerel, Devonshire, which he was obliged to quit at the Restoration; removed to Saltash, Cornwall, whence he was ejected in 1662; settled at Kingsbridge, where he had "a meeting" and was often in trouble. Once, by simply presenting himself at his own door with his cane in his hand, he frightened away an apparitor sent to him with a citation. Having published a pamphlet in 1671, two messengers were sent to him to apprehend him, but, instead of completing their task, they received a threshing from Hicks until they begged his pardon. Finally, he joined the Duke of Monmouth in 1685, and suffered death for doing so.*

The writer appears to have resided at Exeter, since he speaks of "Mr. Seymour who is made *our* governor" [the governor of Exeter]; and that he did not accompany the Prince's party beyond the city may be inferred from his statement that "the last news we had was that the Prince was at the Earl of Bristol's, which is by Sherborn."

The knowledge of Scripture displayed by the Prince on the one hand and by Prince George and his companions, who met him near Sherborne, on the other, was most creditable; and is calculated to induce reflections on the probable degeneracy of these latter days in this particular. No one, it is to be hoped, would think of suggesting that the scene may have been rehearsed under the inspiration of Dr. Burnet. There can be no doubt that the mention of the fact that "*David* received" those who met him, "and made them Captains of the band," was politic.

* See ["Kingsbridge Estuary." By S. P. Fox, 1864, pp. 17-19]

The second paper, according to its title or preamble, was sent from Exon; and this, as we have seen, was the case with the first also. The second, moreover, professes to be "a further account of the Prince's army," implying, therefore, at least one previous account, and, at the first glance, suggesting that the paper already noticed was that previous account, and that the two were by the same hand. Nevertheless, the words "a further account" must be editorial only, for if the dates are to be trusted, the second of the two papers in the pamphlet must have been written before the first of them, since the first follows the Prince's movements "from the day of his setting sail from Holland, to the first day of . . . December," whilst the second is dated "Nov. 24th."

It is scarcely probable that the writer of this second paper resided at Exeter, as he says "When I came here, I endeavoured to inform myself, after the best manner I could," &c.

That the person to whom this communication was addressed resided in London there can be no doubt, since the writer says "The streets [of Exeter] were thronged almost as thick as *yours* on a *Lord Mayor's day*."

That the writer was a partisan of the Prince of Orange, may be inferred from the terms of admiration in which he speaks of all he saw at Exeter.

It is perhaps noteworthy that the two papers agree in the following points:—That the Prince's army consisted of about 20,000 men; that they paid for all the provisions supplied to them; that Captain Burrington was the first of the local gentry to give in his adhesion; that most of the local gentry soon followed his example; that the local gentry entered into an Association to support the Prince; and that large numbers of the country men offered themselves "to be listed."]]

II.—REPRESENTATIVES OF DEVONSHIRE IN THE PARLIAMENT DISSOLVED SEPTEMBER 21ST, 1710.

[There is in Colonel Morgan Clifford's Library a large printed sheet entitled] "The Whole and Exact List of the Late Parliament, as well *Scotch* as *English*, Dissolv'd the 21st of *September* last 1710, wherein is Distinguish'd those who Voted for or against Dr. *Henry Sacheverel*; * * * * *

Note, *those with this mark [*] were for the Doctor*, the rest against him."

[The following is the portion of the list appertaining to Devonshire.]

"DEVONSHIRE 26" [Members of the House of Commons]

[The County]	. . .	*Sir William Courtenay, <i>Bar.</i> *Robert Rolle, <i>Esq.</i>
City of Exeter	. . .	*Nicholas Wood, <i>Esq.</i> John Harris, <i>Esq.</i>
Borough of Totness	. . .	*Sir Edward Seymour, <i>Bar.</i> *George Courtenay, <i>Esq.</i>
Borough of Plymouth	. . .	Sir George Bing, <i>Kt.</i> Hon. Charles Trelawny, <i>Esq.</i>
Town of Oakehampton	. . .	John Dibble, <i>Esq.</i> William Harris, <i>Esq.</i>
Borough of Barnstable	. . .	*Richard Ackland, <i>Esq.</i> *Nicholas Hooper, <i>Esq. One of Her Majesty's Serjeants at Law.</i>
Borough of Plympton	. . .	George Treby, <i>Esq.</i> Richard Edgcomb, <i>Esq.</i>
Borough of Honiton	. . .	*Sir Will. Drake, <i>Kt. and Bar.</i> Sir Walter Yonge, <i>Bar.</i>
Borough of Tavestock	. . .	Sir John Cope, <i>Jun. Kt.</i> *Henry Manaton, <i>Esq.</i>
Borough of Ashburton	. . .	Roger Tuckfield, <i>Esq.</i> Robert Balle, <i>Esq.</i>
Borough of Clifton Dartmouth Hardnes	. . .	*Nathanel Herne, <i>Esq.</i> Frederick Herne, <i>Esq.</i>
Borough of Boralston	. . .	Spencer Cowper, <i>Esq.</i> Sir Peter King, <i>Kt. Recorder of the City of London.</i>
Borough of Tiverton	. . .	Thomas Bere, <i>Esq.</i> *Richard Mervin, <i>Esq.</i>

[The total number of the Commons is given as 558.

The following words occur at the foot of the page.]

"LONDON: Printed, and Sold by *A. Collins*, at the *Black-Boy*, over-against St. Dunstan's-Church, Fleet-street. 1710. Price Two Pence."

[It is, perhaps, worthy of remark that "Sir George Bing," Member for Plymouth, was, according to Mr. Worth's list ("Hist. of Plym." p. 109), the "Hon. Sir G. Byng" in 1710. He represented Plymouth in successive Parliaments from 1705 to 1720.

Affixing "Esq." to names to which "Hon." is prefixed, as

in the case of "Hon. Charles Trelawny, Esq.," appears not to have been unintentional or an oversight, as it occurs in 40 other instances in the case of "Hon.," and 6 times in the case of "Rt. Hon." Indeed, the only exception is that of the "*Hon. George Douglas*," Member for the "*Burgh of Linlithgow*." The word "*The*," in a very few cases, precedes "Hon." and "Rt. Hon."

It will be observed that whilst Totness, Plymouth, &c., are called *Boroughs*, Oakehampton is called a *Town*. The following appear in the list under the latter designation:—Bedford, Buckingham, Cambridge, Derby, Pool, Leicester, Stamford, Lyn Regis, Great Yarmouth, Northampton, Brackley [Northamptonshire], Newcastle upon Tyne, Berwick upon Tweed, Nottingham, Newark upon Trent, Salop, Bishop-Castle, Southampton, Portsmouth, Kingston upon Hull, Rye, Winchelsea, Seaford, Brecon, Cardigan, Carmarthen, Carnavan, Denbigh, Flint, Cardiff, Montgomery, Pembroke, Haverford West, and New Radnor. Indeed, Beaumaris is the only Welsh *Borough* in the list.

The only instances in which the names of places in Devonshire are not spelt as at present, are the following:—Oakehampton, Barnstable, Tavestock, and Boralston.

Considerable freedom is used in spelling the word *Borough*, for whilst the form just given is much more prevalent than any other, Ashburton is not the only instance of a *Borough* for the same orthography is employed for Melcomb-Regis and Ludlow, whilst Ilchester, Milbourn Port, Yarmouth, Petersfield, Newport *alias* Medena, Stockbridge, Newton (Southamptonshire), Christ-Church, Lymington, Whitchurch, and Andover are *Borrourghs*; and Southwark is a *Bourrough*.]

THOMAS BENET.

A BIOGRAPHICAL SKETCH.

BY PAUL Q. KARKHEK.

(Read at Torrington, July, 1875.)

In the early part of the sixteenth century there was studying at the University of Cambridge a young man of the name of Thomas Benet, and who was also a native of the same town. As is usually the case, a university town was a good place then, as was Athens of old, "to tell or hear of some new thing;" and consequently the seeds of the coming Reformation were being scattered broadcast among the students.

Benet had made the acquaintance of one Thomas Bilney, who afterwards suffered for his faith, and by him was instructed secretly in the doctrines of the new creed. On taking his degree of B.A., Benet also took to himself a wife; and just then, the search for heretics getting very hot, he deemed it best to leave his native town, and find some spot where he would have a chance of being allowed to believe as he liked, and at the same time earn his living. We are not told what inducement led him to turn his footsteps westward; but early in the year 1524 Benet arrived at the quiet little town of Torrington. Here he endeavoured to keep a school; but the attempt did not succeed, or at all events he did not make it pay, for after residing in Torrington twelve months, he once more raised his camp, and settled in Exeter.

This time he was more successful, and he managed to secure a living by means of a school he kept in Butcher's Row. In Exeter he lived six years, and earned the respect of all who knew him. He was spoken of as "of a very courteous nature, humble to all men, and offensive to nobody." Doubtless he kept his views on religious matters to himself, or the Cathedral dignitaries would never have allowed him

to keep a school in Exeter very long. He was a regular attendant on all occasions when there was a preaching at the Cathedral, and probably by this habit warded off suspicion of heresy.

Sir Thomas More was very active in London in hunting up Reformers, and committing them to prison; and as such a hunt was of an exciting nature, the taste for this sport spread to the provinces; and consequently the ecclesiastical authorities of Exeter endeavoured to find grace in the eyes of Henry VIII. by emulating the doings of his minister. They succeeded in finding a subject for their skill in the person of Mr. William Stroud, a country gentleman who resided at Newnham, and who was committed to the Bishop's prison in the fall of the year 1530. What became of this gentleman we are not told; probably he had influence enough to get acquitted of the charge laid against him, for there is no evidence of his being burnt. The arrest of Mr. Stroud seems to have disturbed the peace of mind of poor Benet; for after long consideration he appears to have come to the conclusion, that his duty was no longer to hold his creed in secret, but openly to attack the Romanists, as he called them, in this stronghold of their power. Though a perfect stranger to Mr. Stroud, he addressed him a letter of consolation, and which letter has been handed down to us by the recording care of John Hoker. In it are these words: "Because I would not be a whoremonger or unclean person, therefore I married a wife, with whom I have hidden myself in Devonshire these six years."

Soon after writing this letter to Mr. Stroud, Benet called a meeting of his friends—in all probability Reformers like himself, but who held their faith in secret. He explained to them that he could no longer live in the way he had, but that he felt impelled to do his best to propagate his views on religious matters. Knowing the risk he ran, and feeling certain that his way would lead him to the stake, he proceeded to distribute his property, a few books, among his friends; and they in their turn prayed "that he might be strong in the cause, and continue a faithful souldier to the end."

Benet opened the campaign by going in the night to the door of the Cathedral, and fixing to it a placard containing these words: "The Pope is Antichrist, and we ought to worship God only, and no saints."

When this was discovered in the morning, there was a great disturbance, of course, and it proved a subject for talk

and bustle for some days. The bishop and his colleagues naturally enough made a stir in denouncing the unknown offender; and the mayor and magistrates were compelled to exert themselves to effect his capture, but to no purpose. The Sunday following, Benet went as usual to the Cathedral to hear the sermon, and while there was closely watched by two men who had been very active in searching for the writer of the heretical placard. One of them said, "Surely this fellow is the heretic;" but Benet, who heard him, gave no sign, and continued reading his book, which, if they had been sufficiently literate, they would have found to be the New Testament in Latin.

No one having found the heretic, the clergy proceeded with great solemnity to pronounce the sentence of excommunication on him *in contumaciam*. Such a sight as this was sure to fill the Cathedral; and Benet was present. The sermon delivered on this occasion was on the text, "There is an accursed thing in the midst of thee, O Israel." (Joshua vii. 13.) At that stage of the ceremony when the cross is thrown to the ground, and falls with a noise, the congregation was much excited, and some of the women shrieked. Benet, forgetting his usual caution, was seen to laugh at this climax, and was immediately pounced on by the angry bystanders, who asked him "what he was laughing at?" and then shouts arose of "Here is the heretic! here is the heretic!" "Hold him fast!" and so on. Great confusion took place, and in the midst of the disturbance Benet contrived to escape.

A day or two afterwards, at five o'clock in the morning, Benet sent his serving-lad to fix a placard "on the little stile." The lad was seen doing this by a citizen, who at once seized him and his placard, and bore off both to the mayor. The boy, being asked, revealed the name of his master, and Benet was soon arrested and placed in the stocks. The prisoner was visited in confinement by the Bishop, John Veysey, *alias* Harman, and others of the Cathedral clergy—including Doctors Moseman, Crispin, and Casely—and the preachers Bascavild and David, and Gregory Basset, a bachelor of divinity. These men were impressed by Benet's appearance and manner, and were apparently inclined to let the prisoner escape, if he would only give them a loophole to do so. Gregory Basset was the only exception, and he was determined that Benet should not escape. Basset's religious character would not bear inspection. He had been at one time inclined to the reformed doctrines; but "the canons of Bristow made him recant by showing a pan of fire." Here

there was a golden opportunity for exhibiting his zeal for the faith, and ingratiating himself in the good opinion of those in power. Basset and Benet had many an argument in the course of the trial, some of which have been handed down by Hoker, or rather what Hoker probably thought ought to have been the arguments; but, as usual, those in power carried the day, and by Basset's influence the heretic was condemned to burn, and Sir Thomas More sent from London the writ *de comburrendo* to authorize the execution.

On January 15th, 1531, Benet was handed over to the civil power in the person of Sir Thomas Denis, Knt., who was at that time Sheriff of Devon. The place of execution was the Livery-dole, on the Heavitree Road, where a few years ago, in making some excavations, a post with an iron ring was discovered, and which was supposed to be the spot where the heretic and witch burnings took place. The martyr was dressed for the occasion in a jerkin of neat's leather; why, we are not told; probably it had some symbolical meaning now forgotten. Two gentlemen present made themselves very officious in an extremely brutal manner. They were called Thomas Carew and John Barnehouse. The latter in particular was unnecessarily cruel; "for he took a furze-bush upon a pike, and setting it on fire, thrust it in the martyr's face," saying, "Accursed heretic! pray to our Lady, or I will make you do it." On the executioner setting fire to the wood, there was a great competition among the bystanders, each being desirous of emulating the example of the aforesaid John Barnehouse. The record says "that well was he or she that could catch a stick or a furze to cast into the fire."

Thus perished Thomas Benet, a victim of the times he lived in and his own impetuosity. Twelve months later, and the minister who signed his death-warrant was in disgrace; and two years after, on January 25th, 1533, Henry VIII. was married to Anne Boleyn; and matters were too far gone then for any one to obtain a writ *de comburrendo*—at least for the party who burned poor Benet.

The fact of this man having resided for the space of twelve months in Torrington has induced me to bring forward on this occasion a short account of what is known, or at least reported, of his life and death.

SKETCH OF RISDON.

BY J. M. HAWKER.

(Read at Torrington, July, 1875.)

IN accordance with the aims of this Association, which, whilst unrestrained in its range of subjects, so long as they relate to science, literature, or art, desires to notice events of local interest, and to commemorate local worthies, I venture to put before you a slight sketch of one who was born close to and educated mainly in the parish where we are now assembled.

The year before last a distinguished Devonshire painter, Haydon, came before us; last year the scholar and poet, Winthrop Mackworth Praed; now literature claims recognition in another branch. Whether Risdon is to be ranked among historians I will not say. He is, at any rate, the author of—to use his own words—“The Chorographical Description or Survey of the County of Devon, with the City and County of Exeter; containing matter of history, antiquity, chronology, the nature of the country, commodities and government thereof, with sundry other things worthy observation. Collected by the travail of Tristram Risdon, of Winscott, Gentleman, for the love of his country and countrymen in that province.”

There seems an appropriate retribution—taking the term in a good sense—that some two hundred and seventy years after his death we, as a county society, should be doing for him after a fashion, however slight, what he did with so much love and diligence, and that nigh to his own home, the scene of his labours. Doubtless, if there had been the opportunity in his day, he would gladly have joined our company, and valuable papers from him would have been easily and gratefully received, and published in the well-known volume which, increasing each year in bulk, issues from the press of our excellent printers, Messrs. Brendon and Son.

I do not propose to weary you with any prolonged details of Risdon's life or work. They are not generally interesting, except so far as they enable us to draw a lesson from them. He was born about 1580, at Winscott, in St. Giles-in-the-Wood, the parish adjoining Torrington.* The family came from Risdon, in Gloucestershire, and settled at Bableigh, in Parkham and Winscot, in the reign of Edward I. Risdon's early education was at a school in Torrington. About the end of Queen Elizabeth's reign he entered either Exeter College, Oxford, or Bradgate; i.e. Broad Gate Hall then, now Pembroke College.

It is uncertain how long he remained there, and he took no degree. Why he did not we have no means of ascertaining. It could not have been (judging from what he did afterwards) from any incapacity. Probably the inheriting of Winscott from his half-sister (on the mother's side) Thomazin, who married John Tripconey, of Gulvall, in Cornwall, and who died without issue, altered his views, as it did his position, and called him from academical studies to the personal superintendence and management of his property. No doubt he discharged all the duties of his station, and the immediate calls of his estate, well and fitly, as happily so many of his class did and do now.

But we may fairly assume that his sojourn at the University of Oxford—not then such a common curriculum in his rank of life as in these days—and the scholarly tastes he gained there, had stirred his intellectual nature, and caused him to aspire to something beyond the ordinary pursuits of country life. He set himself therefore a task which, whilst it befitted his liberal education, would likewise be of service to his fellows, especially those amongst whom his lot was cast.

He tells us himself that he collected the materials of his survey of the county of Devon "with travail for the love of his country and countrymen in that province." A truly laudable and patriotic design. There was no Murray in those days to bring out admirable handbooks with full yet concentrated information about each locality, as suggestive and capable of expansion as Liebig's essence of meat. And besides the immediate benefit to those of his own time, such a work as Risdon's is of course a mine of materials for modern enquirers into the history of a county.

Moreover, like Falstaff, who was not only witty himself, but the cause of wit in others, Risdon appears to have stirred to similar labours men like Westcott, who compiled *A View*

* MOORE'S *History of Devonshire*, vol. ii. p. 370.

of *Devonshire*, which existed only in manuscript until it was printed for subscribers by Roberts of Exeter, in 1845, the editors being Dr. Oliver and Mr. Pitman Jones—and William Chapple, of Exeter, who wrote *A Review of part of the Survey*.

Risdon's work comes down to about the year 1630. He was much indebted to Sir William Pole in his compilation; and no doubt, from his standing in the county, he was able to gain much information and assistance from many quarters.

Westcott speaks in high terms of Risdon, whom he visited at Winscott, and of the value of his researches. His authority is no mean one; for, as I mentioned, he himself wrote *A View of Devonshire*, which was not printed for many years, although quite worthy of a more immediate circulation than the three or four manuscript copies only that existed until 1845, one of them being in the possession of Sir Lawrence Palk, at Haldon House, where, by his permission, I have seen it in good preservation.

Chapple also, a bookseller of Exeter, wrote *A Commentary upon Risdon's General Description of Devonshire* in or about 1770. Chapple was a man of probity and large, generous mind. The first publication of any portion of Risdon's work was by a man of quite a different stamp. In 1714, one Curll, a bookseller of London, was about to bring out a curtailed and scamped edition, which would have done great injustice to the author. Prince, author of *Worthies of Devon*, happened to get sight of this dishonest production before it had actually gone forth to the public, and remonstrated strongly with Curll, who was at last induced to publish a continuation such as really did justice to Risdon's work. Probably in those days the law of copyright was not so accurately defined as it is now, at least in this country.

A complete edition of Risdon's works was published in 1811 from a manuscript belonging to John Coles, of Stonehouse, Devon, which was considered, on the whole, by competent judges to be the best and completest.

The range of Risdon's *Survey* was comprehensive, and far more than a mere compilation of dry facts and statistics, valuable as they are to succeeding generations. His general description of Devonshire, prefixed to the *Survey*, is an important and apparently trustworthy picture of the customs and resources, agricultural or otherwise, of the county at that time. It is more, too, than this; for it not only shows how people cling to customs and resources, which arise naturally out of their position, even after the immediate occasion for them has passed away, but it illustrates forcibly the effect which

such customs and modes of living have upon the soil itself and all connected with it. The philosophy of history may be seen in small, ordinary details, as well as by great wars or changes of governments and dynasties.

To take a few instances from Risdon's work. He describes the mode of traffic in his day throughout the principal part of the county by pack-horses. No doubt the lines and direction of our parish roads, at any rate, were thus determined; and I suppose the constant tramp of strings of heavily-laden horses on the soft soil, year by year, caused so many of our lanes and roads to be what they are, deep down beneath wasteful high banks; wealths indeed of loveliness in the time of flowers, but shutting out sight, light, and air.

Chapple, in his *Commentary on Risdon*, tells us of the introduction of turnpikes in 1753, and of the objections to them, one being that they would raise the price of oats!

I am old enough myself to remember an aged farmer who told me, now nearly twenty years ago, that in his younger days he used to start from Moretonhampstead at three in the morning, with potatoes and other vegetables on packhorses, for Exeter market, where he stood all day, often wet through with rain or snow, returning again late at night. He lived until ninety years of age, and must have had an iron constitution to stand such exposure and such long hours. Those who did live to old age under such hardships were undoubtedly giants.

Then, again, Risdon speaks of what is still called and practised, "liming," as quite a new mode of husbandry; and he comments on the use of lime, where a soil is defective in calcareous mixtures, with much good sense and acuteness of observation. He must, too, have been in advance of his time; for in speaking of leaseholdings by fines, he clearly denounces the system as fatal to improvements in farming. Yet it lasted long after Risdon's pen was laid down, and its ill effects have scarcely passed away altogether. Cyder, in his time, appears to have been as much part of the proceeds of farms, and to have helped to pay the rent, as it does now in a fruitful year. He notices also the geological strata of the county, dividing them into the three great divisions of what is now called schist, granite, and limestone; a sufficiently accurate description, I suppose, for ordinary classification. The industrial pursuits of the county are not forgotten by him. He mentions the mines, the large woollen manufactories, and those for serge especially, which still exist; so that his Survey must have been, on the whole, a very complete record of the various

points for instruction and observation, either for natives or strangers.

Of course there were those—principally among the country gentlemen, who were the most likely to be interested in the work—who found fault, some saying that his account of *their* seats or localities was not long enough, and of other places too long. People are equally difficult to please in the matter of funeral sermons; the relatives generally thinking that much more might have been said of the departed, strangers and indifferent persons resenting any prolonged eulogy.

Such is a meagre sketch of a man who might have been merely one of the *fruges consumere nati*—the useless drones of society; those whom a little later George Herbert, Risdon's junior by about seventeen years, so indignantly apostrophised in *The Church Porch*:

“O England, full of sin, but most of sloth,
Spit out thy phlegm, and fill thy breast with glory!
Thy gentry bleat, as if thy native cloth
Transfused a sheepishness into thy story:
Not that they all are so; but that the most
Are gone to grass, and in the pasture lost.
“This loss springs chiefly from our education;
Some till their ground, but let weeds choke their son;
Some mark a partridge, never their child's fashion;
Some ship them over, and the thing is done.
Study this act; make it thy great design;
And if God's image move thee not, let thine.”

His early possession of a fair estate might have tempted him to idleness, or disposed him to an unrestrained indulgence in field sports, like probably the majority of his neighbours of the same class. But from whatever cause—most likely from the good influences of his *alma mater*, Oxford—he devoted himself to a work which must have required much intellectual industry and patient research, besides literary skill in its compilation. He appears to have been altogether an excellent specimen of a cultivated, intelligent country gentleman, then, as now, a class whom we may call the backbone of England.

Happily in these days we need not say despairingly, “*O si sic omnes!*” for the exception to Risdon's good qualities is, as a rule, rare, although all may not turn so diligently to his pursuit of literature.

There are few now who in his position, with leisure and means, do not carry out, more or less, the quaint yet admirable counsel of George Herbert, which might almost be the motto of our Association:

“Be useful where thou livest, that they may
Both want and wish thy pleasing presence still.”—*Church Porch*.

ON THE COMPARATIVE METEOROLOGY OF DEVONSHIRE.

BY W. C. LAKE, M.D., F.M.S.

(Read at Torrington, July, 1875.)

LAST year I brought before the Devonshire Association some tables illustrating the comparative meteorology of certain localities in England, from observations taken at them during the same period of time (about seven years), and suggested the desirability of the meteorology of Devonshire being similarly illustrated, year by year, under the auspices of the Association.

I now present to you what is but an *avant-courier* of such a plan, in the form of the means, etc., of meteorological observations taken during the year 1874, at the following places in Devonshire: at Barnstaple, by Mr. Mackrell (taken from the quarterly returns of the Meteorological Society); from Exeter, by Mr. Parfitt; from Prince-town, Dartmoor, by Mr. Power; from Druid, Ashburton, by Mr. Amery; from Sidmouth, by Dr. Mackenzie (also taken from the returns of the Meteorological Society); from Torquay, by Mr. Vivian; and from Teignmouth by myself, the rainfall having been taken by Mr. Ormerod.

THERMOMETERS IN SHADE.

JANUARY, 1874.

Height above sea level.	Name of Place.	Barometer reduced to sea level for hi. Mean.	Highest Maximum.	Lowest Minimum.	Mean of all Maxima.	Mean of all Minima.	Mean Daily Range.	Mean Temperature of air.	Mean Humidity (Saturation=100).	Wind.	Total Rain.	No. of days Rain fell.
feet.		inches.										
43	Barnstaple . . .	30.028	55.0	30.0	49.7	39.6	10.1	44.8	93	W.S.W.F.	4.06	24
140	Exeter . . .	29.909	55.0	24.0	48.7	38.7	10.0	43.7	90	.....	3.32	
1374	Prince-town . . .	28.704	.....	.....	45.2	35.9	9.4	40.6	92	.....	12.44	24
583	Druid, Ashburton . . .	29.60	56.0	29.0	49.6	36.0	13.6	43.3	95	W.S.W.	7.27	19
30	Sidmouth . . .	30.065	53.8	29.1	49.3	38.2	11.1	44.3	80	W.N.S.W.	2.86	15
70	Teignmouth . . .	29.957	55.0	28.7	49.6	38.8	10.8	44.7	88	W.S.W.F.	3.88	10
160	Torquay . . .	.....	57.0	35.0	52.8	43.2	9.6	.....	83	.....	3.31	18

FEBRUARY.

Height above sea level.	Name of Place.	Barometer reduced except for ht. Mean.	Highest Maximum.	Lowest Maximum.	Mean of all Maxima.	Mean of all Minima.	Mean Daily Range.	Mean Tem- perature of air.	Mean He- midicity— rations=100.	Wind.	Total Rain.	No. of days Rain fell.
feet.		inches.										
43	Barnstaple . .	29.929	54.5	30.5	48.7	38.8	9.9	44.4	88	S.E.W.N.E.	2.81	17
140	Exeter . . .	29.860	55.0	23.0	48.3	37.7	10.6	42.6	92	.....	4.00	
1374	Prince-town . .	28.652	.....	.....	43.9	34.1	9.8	39.0	90	.....	7.54	18
583	Druid, Ashburton	29.53	56.0	25.0	48.0	35.4	12.6	42.2	80	N.E.S.W.	5.39	18
30	Sidmouth . .	29.955	52.0	28.1	47.3	37.8	9.5	42.3	93	S.W.N.E.	3.36	16
70	Teignmouth . .	29.943	53.4	28.0	48.7	38.8	9.9	43.4	85	W.S.E.N.	4.22	14
160	Torquay . .	.....	57.0	33.0	46.8	38.6	8.2	.....	81	.....	4.06	16

MARCH.

43	Barnstaple . .	30.175	60.0	27.0	52.7	42.4	10.3	46.8	80	W.S.E.N.	2.07	14
140	Exeter . . .	30.105	61.0	20.0	52.4	40.3	12.1	45.7	82	.....	0.42	
1374	Prince-town . .	28.875	.....	.....	46.2	35.2	11.0	40.7	89	.....	4.22	17
583	Druid, Ashburton	29.77	63.0	23.0	53.0	36.7	16.3	45.2	84	W.N.E.N.	1.09	15
30	Sidmouth . .	30.222	58.6	25.0	50.9	39.5	11.4	44.9	90	W.S.W.N.	0.47	7
70	Teignmouth . .	30.187	60.6	24.5	52.3	39.6	12.7	45.2	85	W.N.E.N.	0.38	10
160	Torquay . .	.....	60.0	30.0	54.8	44.5	10.3	.....	82	.....	0.53	15

APRIL.

43	Barnstaple . .	29.825	79.0	35.0	60.5	46.1	14.4	52.3	77	W.S.W.N.	1.89	11
140	Exeter . . .	29.766	69.0	27.3	59.5	42.6	16.9	51.8	82	.....	1.84	
1374	Prince-town . .	28.603	.....	.....	51.7	37.5	14.2	44.6	79	.....	5.70	17
583	Druid, Ashburton	29.42	72.5	30.0	56.7	39.7	17.0	50.2	84	W.S.W.N.	3.73	15
30	Sidmouth . .	29.856	65.5	32.9	56.6	43.1	13.5	48.8	90	S.W.N.E.	2.02	13
70	Teignmouth . .	29.844	64.5	31.0	58.0	42.4	15.6	49.4	79	W.S.W.N.	2.22	12
160	Torquay . .	.....	66.0	38.0	58.6	46.6	12.0	.....	75	.....	2.22	13

MAY.

43	Barnstaple . .	29.942	71.0	34.0	63.8	47.2	16.6	54.3	73	W.S.W.N.	0.70	9
140	Exeter . . .	29.901	73.0	30.0	62.6	44.6	18.0	52.1	79	.....	1.00	
1374	Prince-town . .	28.645	.....	.....	56.7	40.4	16.3	48.5	95	.....	1.61	13
583	Druid, Ashburton	29.54	72.0	33.0	62.3	40.3	22.0	53.1	81	N.E.W.S.	1.10	13
30	Sidmouth . .	2.9972	68.3	34.8	59.2	43.5	15.7	49.9	85	S.W.N.E.	1.30	9
70	Teignmouth . .	.....	71.7	34.4	61.5	43.8	17.7	50.9	76	.....	0.94	11
160	Torquay . .	.....	70.0	40.0	63.9	49.4	14.5	.....	72	.....	1.10	10

JUNE.

43	Barnstaple . .	30.069	79.0	43.0	70.6	53.2	17.4	60.0	74	S.W.N.E.	1.48	7
140	Exeter . . .	29.995	79.0	35.0	68.8	51.2	17.6	58.2	76	.....	2.14	
1374	Prince-town . .	28.813	.....	.....	63.2	46.5	16.7	54.8	69	.....	2.78	9
583	Druid, Ashburton	29.67	81.0	40.0	69.5	47.5	22.0	59.6	75	N.E.W.S.	2.34	8
30	Sidmouth . .	30.102	75.8	40.0	65.6	50.3	15.3	57.0	76	S.W.N.E.	1.85	6
70	Teignmouth . .	30.082	77.3	45.4	68.1	51.0	17.1	57.7	74	S.W.N.E.	1.48	9
160	Torquay . .	.....	78.0	49.0	69.2	53.7	15.5	.....	71	.....	2.13	10

JULY.

Height above sea level.	Name of Place.	Barometer reduced except for ht. Mean.	Highest Maximum.	Lowest Maximum.	Mean of all Maxima.	Mean of all Minima.	Mean Daily Range.	Mean Tem- perature of air.	Mean Ho- midity, sec- pithology-100.	Wind.	Total Rain.	No. of days Rain fall.
feet.		inches.										
43	Barnstaple . .	29.976	86.0	48.5	74.1	57.2	16.9	64.3	75	S.W.E.N.	2.77	14
140	Exeter . . .	29.893	80.3	41.0	73.1	56.0	17.1	62.6	78	.....	1.22	
1374	Prince-town .	28.736	.....	.....	66.0	50.7	15.3	58.8	59	.....	3.01	16
583	Druid, Ashburton	29.55	83.0	44.0	69.0	51.1	17.9	62.9	80	S.W.E.N.	1.77	13
30	Sidmouth . .											
70	Teignmouth .	29.951	79.2	47.3	71.8	54.1	17.7	61.4	76	S.W.E.N.	0.86	10
160	Torquay . .	.....	82.0	53.0	73.4	59.7	13.7	.....	77	.....	0.81	8

AUGUST.

43	Barnstaple . .	29.894	83.0	48.5	69.7	56.0	13.7	61.3	82	S.W.E.N.	5.65	21
140	Exeter . . .	29.864	76.0	40.5	75.4	53.6	21.8	62.9	82	.....	2.94	
1374	Prince-town .	28.688	.....	.....	62.0	49.4	12.6	55.6	79	.....	10.61	25
583	Druid, Ashburton	29.54	76.0	45.0	68.8	54.2	14.6	60.3	83	S.W.E.N.	4.91	19
30	Sidmouth . .											
70	Teignmouth .	29.912	76.2	47.2	68.8	53.2	15.6	59.7	76	S.W.E.N.	2.40	15
160	Torquay . .	.....	75.0	51.0	70.8	59.2	11.6	.....	74	.....	1.94	16

SEPTEMBER.

43	Barnstaple . .	29.854	79.0	48.0	66.8	53.5	13.3	58.9	81	S.W.E.N.	5.93	21
140	Exeter . . .	29.798	70.0	37.0	64.8	50.9	13.9	57.6	88	.....	5.46	
1374	Prince-town .	28.494	.....	.....	59.2	47.7	11.5	53.4	87	.....	10.04	24
583	Druid, Ashburton	29.46	78.0	42.0	65.8	48.8	17.0	58.1	87	S.W.E.N.	7.22	22
30	Sidmouth . .											
70	Teignmouth .	29.834	73.0	43.2	66.1	51.1	15.0	57.7	83	S.W.E.N.	5.06	22
160	Torquay . .	.....	69.0	50.0	65.6	55.0	10.6	.....	78	.....	5.52	21

OCTOBER.

43	Barnstaple . .	29.818	64.0	41.5	59.8	49.7	10.1	54.0	83	S.W.E.N.	4.44	25
140	Exeter . . .	29.755	63.0	32.0	58.0	46.9	11.1	52.5	86	.....	5.36	
1374	Prince-town .	28.554	.....	.....	52.9	43.4	9.5	48.6	93	.....	13.63	25
583	Druid, Ashburton	29.44	64.0	36.0	59.4	44.0	15.4	52.7	90	S.W.E.N.	9.28	26
30	Sidmouth . .											
70	Teignmouth .	29.775	65.5	38.2	59.7	46.9	12.8	52.8	83	S.W.E.N.	6.34	29
160	Torquay . .	.....	64.0	44.0	61.3	52.6	8.7	.....	81	.....	5.89	25

NOVEMBER.

43	Barnstaple . .	29.919	62.0	34.0	53.5	43.4	10.1	48.0	85	N.E.S.W.	3.06	14
140	Exeter . . .	29.347	59.0	30.0	51.4	42.2	9.2	46.8	90	.....	3.26	
1374	Prince-town .	28.690	.....	.....	48.9	39.8	9.1	44.3	92	.....	5.34	23
583	Druid, Ashburton	29.50	61.0	27.5	52.5	38.9	14.6	46.3	92	S.W.E.N.	5.36	16
30	Sidmouth . .											
70	Teignmouth .	29.894	61.8	30.3	53.4	41.4	12.0	47.0	84	S.W.E.N.	3.58	13
160	Torquay . .	.....	64.0	35.0	54.8	45.3	9.5	.....	88	.....	3.16	20

DECEMBER.

Height above sea level.	Name of Place.	Barometer corrected for ht. Mean.	Highest Maximum.	Lowest Minimum.	Mean of all Maxima.	Mean of all Minima.	Mean Daily Range.	Mean Tem- perature of air.	Mean Hu- midity (Sta- tion=100).	Wind.	Total Rain.	No. of days Rain fell.
feet.		inches.										
43	Barnstaple . .	29.797	54.0	24.0	43.7	33.4	10.3	38.8	85	N.E.W.S	7.10	22
140	Exeter . .	29.655	57.0	22.3	41.7	32.1	9.6	37.0	88	.....	3.78	
1374	Prince-town . .	28.435	.....	44.9	29.3	15.6	37.1	92	.....	.....	9.48	23
583	Druid, Ashburton	29.34	55.0	25.0	43.7	30.2	13.5	37.2	96	N.W.E.S	8.00	23
30	Sidmouth . .											
70	Teignmouth . .	29.728	57.2	26.0	43.5	32.1	11.4	38.0	83	W.N.E.S	5.17	18
160	Torquay . .	.....	55.0	31.0	45.9	36.7	9.2	.....	83	.....	4.49	22

The number of places from which I have been able to obtain observations is, as will be seen, small; yet this is but an additional reason for prosecuting the measure I have proposed with energy and perseverance. The microcosmic character, if I may so call it, of Devonshire makes accurate and sufficiently numerous and widely-spread meteorological observations taken over it of more than usual interest. In this single county we have ground of greater elevation than any existing in England south of Yorkshire and exclusive of Wales, a sea-board of varying outline and considerable extent, valleys differing from each other in various degrees in depth and size, and a very considerable diversity of soil; and it cannot but be that the careful meteorological study of such a county must lead to information valuable in its bearing on its own climatic characteristics, and on the increase of general scientific knowledge also.

Yet observations to have this value must be accurate, and, as far as possible, strictly comparable; and to exclude fallacy on this head will be a matter of moment as well as difficulty; for I cannot but feel that from defects in this direction, the comparison of observations taken at different places, even at the same time, is too often deprived of nearly all real value.

The comparison of barometric observations requires only that the instrument used in each case should be well constructed and in good condition, its index error known, and its elevation above sea-level ascertained. The comparison of rain-fall observations requires simply uniformity of construction and position of gauge, and of its height above the ground; but in thermometric observations, besides the use of standard instruments similarly constructed, the question as to what is to be understood by temperature in the shade is one not easily to be answered quite satisfactorily; for it is

evident that observations taken with instruments mounted on differently constructed stands, and under various conditions of exposure or protection, though all in the shade, are not so perfectly comparable as those taken with the other meteorological instruments mentioned above. I doubt not, however, that even at first a certain number of stations may be found where fairly strict similarity of conditions may be obtained, and that each year the number of these will be found to increase; while in this, as in many other things in this life, we may bear in mind that if we cannot always do the best thing conceivable, we may at least do the best that is possible.

The value of barometric observations, as showing the relative pressure of the air at different localities and at different times, and that of those by the thermometer, as determining the extremes and means of temperature, are well known and recognized; but not the least interesting of the observations taken, as I have suggested, will be those illustrating the relative humidity of different places. That this is not represented by the rainfall is well shown by comparing the rainfall and degrees of humidity at Sidmouth and at Princetown for the first six months of 1874, when it will be seen that though the rainfall in each month was less, in some very much less, at the former place than at the latter, yet that in January and May only was there a lower degree of humidity at Sidmouth than at Princetown.

The main factors from which result the amount of humidity of a place are, I apprehend, besides the rainfall, its proximity or otherwise to the sea, the elevation or want of elevation of its site, the form of the ground, and the character of the soil. The comparison of observations of humidity under the varying condition of these factors in Devonshire, besides their purely local value, can hardly help eventually to tend towards the solution of problems of general and lasting meteorological interest as well. The earnest prosecution of discovery in the meteorological domain of science would well become the denizens of that county whose sons were foremost amongst those to whose adventure and discovery we owe our knowledge of the extent and general physical characteristics of the great globe itself.

THE HISTORY OF GREAT TORRINGTON.

BY THE REV. FREDERIC T. COLBY, B.D., F.S.A.

(Read at Torrington, July, 1875.)

GREAT TORRINGTON early became the seat of a considerable market, and its geographical position must always have made it a post of military importance. Situated on a steep eminence overhanging the river, open to approach from one side only without the ascent of a formidable hill, barring the access to the inland country from the mouth of the Torridge, it was a point which no general could venture to neglect, and one which a feudal baron would rejoice to hold. More inland, and therefore more secure than Bideford, a better centre as well as a more protected spot than any other in the district, with a river navigable to the little port at the foot of the hill, it inevitably became the market town for all the surrounding country; so its older name was Cheping, or Market, Torrington. The name itself, spelt in various ways—Toriton, Touritone, Torinton, etc., doubtless took its origin from the river on which the town was situated. Ours was the Great, or the market town on the Torridge, as Little Torrington was the smaller place close by on the same river; and Black Torrington, higher up, derived its special title from the black colour of the water, according to Risdon, or perhaps from the dense woods which surrounded it in ancient times.

Whatever may have been the importance of Great Torrington, the records of its early history are scanty enough. The name of 'Torrington,' as we now spell it, occurs several times in *Domesday*, and there seems to be no certain means of distinguishing between them. Gytha, the mother of Harold, is said to have held lands in Torrington in the time of King Edward, and it appears that most of the population were serfs. In another place it is said that the lands formerly held by Etmar, in the time of Edward, were then held by

Richard under Baldwin. The largest estate mentioned, and which, therefore, was probably Great Torrington, had been held by Bristitius in the time of Edward, and at that time by Otho. There were three freemen on the land—Goselm, Walter, and Ansgar, who succeeded Alfred. The property was worth £15 per annum. There were on it 25 porcarii, 45 villains, etc.

Sir W. Pole tells us that the honour of Torrington was held by Robert de Thoritona in the time of King Henry I., that he was succeeded by his son William, William by John, John by William, and William by Matthew, whose barony and inheritance was divided amongst his five daughters, married unto Merton, Wallis, Tracy, Sully, and Umfraville.

The first two parts continued through divers descents in the name of Merton; the third part descended from Tracy to Martyn; the fourth part from Sully to Guy de Brian; and the fifth part from Umfraville to St. John. This honour held anciently twenty-nine knights' fees, seven of the honour of Gloucester. In the sixth year of Richard I. John de Torrington claims the patronage of the church against the abbess and nuns of St. Edward. In the same reign the common land was given for the benefit of the poor by William Fitz-Robert, Baron of Torrington. In 12 Henry III. (1228) the Sheriff of Devon is commanded to cause the Castle of Torrington, belonging to Henry de Tracy, to be thrown down.* From the *Placita Rotulorum* we learn that Thomas de Merton, Walter de Sully, John de Umfraville, and Galfride de Kamville, were called to answer to Edward I. with regard to certain rights on the assize of bread and beer which they claimed, and for which they had no special warranty. Twelve jurors state that Matthew de Torrington held the barony from the king by service of two knights, and that at that time it was held by four heirs—Thomas de Merton, two parts; Walter de Sully, one part; John Umfraville, one part; and Galfride de Kamville, one part—by the decease of Henry de Tracy, who bought it of Richard Temenet; that the said lords have "liberties" with respect to the assize of bread and beer, and thence receive dues.† John Wyger bought ward and marriage of Thomas de Merton from the escheators of the king. In 20 Edward I. Raymond, son of Walter de Sully, paid £20 for the fifth part of the barony. In the time of Edward II. we find from the *Testa de Nevill*

* *Twenty-seventh Report of the Deputy-Keeper of Public Records* (1866), p. 88.

† The words seem to be misspelt; "*libertates et furcas*" perhaps "*libertates et furcas*;" and the word translated dues, "*mins*," is perhaps "*mises*."

that the monks of the greater monastery, *ultra mare*, held the manor of Torrington and the Church by gift of William I. In 49 Edward III. Sir W. Umfraville, Knight, appoints Thomas Dabernon to deliver seizin to John de Cary and Thomas Cary, parson of Essewater, of one-fifth of the manor of Chepyngtoriton;* and in 2 Henry IV. there is a royal grant of the castle and manor of Chepyngtoriton and other manors of John de Cary, attainted, to Robert Chalons. In the reign of Edward III. (1340) the castle was rebuilt by Richard de Merton. There does not seem to be any record of its being destroyed after this, but I presume that in the course of time it was allowed to fall into decay. Speaking of his own time, Westcote says: "Much good land is held in the castle yard, though the castle itself be brought to the period of his estate, showing itself more by its ruins than anything else;" and Risdon says that "only the chapel remaineth within the site now converted into a school-house." That part of Castle Hill is now known as Barley Grove. "Barley" may possibly be a corruption of "Bailey," the name given to the courts which surrounded the keep of an ancient castle; and "Grove" would be the ditch or moat outside, of which there are still some remains. The Castle was outside the precincts of the borough, and at a stone now built into the garden wall of Castle House, one of the blue-coat boys used annually to be whipped with nettles that he might remember the boundary for the rest of his life. The keep is believed to have stood on Barley Grove. The chapel was taken down in the year 1780.

A memorial of the reign of Henry VI. exists in the shape of a pardon granted by the Crown to certain persons of Great Torrington, which was probably merely a device for raising money.†

In 1484 the sessions were held at Torrington, at which the Marquess of Dorset, Sir Edward Courtenay, Bishop Peter Courtenay, and about five hundred others, were indicted for treason against Richard III., and outlawed; and Sir Thomas St. Leger, who had married the sister of Richard himself, and Thomas Rayme, Esq., were found guilty of high treason, and beheaded at Exeter.‡

That illustrious lady, Margaret Countess of Richmond, and mother of Henry VII., resided much at Torrington in the old Manor House, which she gave as a residence for the clergyman of the parish, whose parsonage was formerly at

* *Cary Records.*

† In the possession of the Town Clerk.

‡ Mook's *Devonshire*, p. 163.

inconvenient distance, at Priestacot. The Manor House was surrounded by a moat, traces of which are rapidly disappearing.

In 1590 the sessions were held here in consequence of the prevalence of the plague at Exeter. It was probably the result of this that Torrington also suffered from the same infliction the year following.

Before passing on to the later history, we will now speak of the church and the borough.

The church was dedicated to St. Michael, and the parish included St. Giles in the Wood. "The circuit in this parish," says Westcote, "was very large, and divers men of great estate and worth settled there, and every demesne had its appropriate chapel." But, though there were these private chapels,* "some of the remotest inhabitants petitioned Walter Bishop of Exeter, in 1309, that they might found another church, which, with the consent of Sir Richard Merton, Knight, the patron of Chepin Torrington, was by the Bishop granted; and the inhabitants purchased a piece of land to build a church, which was consecrated to the honour of St. Giles the holy hermit." The patronage of the church probably went with the manor, which eventually came into the hands of the Crown. Henry VIII. gave the church to Cardinal Wolsey, who again gave it to his new foundation of Christ Church at Oxford. Wolsey was incumbent himself for several years, and on his promotion to the see of Lincoln was succeeded by Ralph Lupton (1514). His immediate predecessor was Anthony Fisher, who succeeded Thomas Borwell.

The manor was given by Queen Mary to James Basset; and in the time of Queen Elizabeth, Philip Basset sold it to William Carew.

The origin of the borough is wrapped in obscurity. It is known that fairs were held here as early as 1220; but all records were destroyed by fire in 1724, and only copies remain of the three charters under which the old corporation acted. Risdon says of the town, in his day, that it was "indifferently beautified with buildings, very populous, flourishing with merchants and men of trade; with a great market furnished from far on every quarter, being the most convenient place for occasions of king or country, upon a general meeting in those parts."

The borough is said to have sent members to Parliament, and to have been relieved of that burden at its own request.

* Risdon.

"The town of Torrington," says Hallam,* "obtained a charter of exemption from sending burgesses, grounded upon what the charter asserts to appear upon the rolls of chancery, that it had never been represented before the 21st of Edward III. This is absolutely false, and is a proof how little we can rely upon the veracity of records. Torrington having made not less than twenty-two returns before that time. It is curious that, in spite of this charter, the town sent members to the two ensuing parliaments, and then ceased for ever."

In 1662, however, the king directed the Lord Chancellor to cause a writ to be sealed empowering the town of Torrington to send two members to Parliament, on the representation of the Duke of Albemarle, that it formerly sent burgesses, that it was loyal and of competent wealth. Nothing seems to have come of this.

The arms of the borough are, "argent, two bars wavy, over all a *fleur-de-lis*, and within a bordure engrailed, all sable." Legend on the seal, "Sigillum Commune Villa de Torrington." These arms were ratified at the visitations of 1564 and 1620. At the last visitation the corporation consisted of Christopher Hockin, Mayor; Thomas Bisdon, Esq., Recorder; Lewis Willington, Justice of the Peace; Richard Gaye, Alderman and Chamberlain; Roger Clarke, Mayor Elect; John Predix, John Seller, Richard Smith, and Roger Frost, Aldermen; William Dennis and Jonas Hill, Receivers; Balthazar Butler, Steward and Town Clerk.

In 1635 the amount of ship-money levied on Great Torrington was £60. Southmolton paid at the same time, £45; Bideford, £40; Okehampton, £30. It appears that the Torrington contribution was paid by Henry Cutting for John Tucker, Mayor.

In 1638 the corporation was called upon to answer with regard to certain casual profits due to the Crown, and it was represented by William Hockin.†

In estimating the importance of Great Torrington in former times, it is necessary to keep in mind as well its military strength as its trade and markets, the castle overlooking the river as well as the borough within. Besides this, it must not be forgotten that to the east of the town, in what is now St. Giles, there was a cluster of ancient and powerful families, all of whom then contributed to increase the importance of Torrington. The first of these old family seats was Stevenstone, which in the time of Henry II. belonged to Richard

* *Middle Ages*, vol. iii. p. 115; also MREWETHER and STEPHENS's *History of Boroughs*, p. 675.

† *Collection of State Papers*.

St. Michael, afterwards passed to Richard Basset, then to Walter de la Ley, who himself took the name of Stevenstone; then to the families of Grant and Moyle in succession; and finally, in the reign of Henry VIII., passed by purchase into the hands of George Rolle, Esq., an eminent merchant of London.* Way belonged to a family of the same name; passed from them to the Pollards, and afterwards to the Wellingtons.†

Winscot was the seat of the Barrys, and from them came to Risdon,‡ the historian of the county, "an admirer and studious lover and treasurer of venerable antiquities."§

Dodescot was the abode of the knightly family of Herward.

Whitsleigh was held by the Dynants, Durants, Kellaways, Drakes, and Wollacombes.

These five family seats were all within the parish of Great Torrington, besides the Castle and the Manor House, and the less aristocratic, but opulent, traders of the borough proper. Of this last class some names have been already given in the list of the corporation of 1620. The following also occur in the visitation: Cuttin, Drew, Greenwood, Goodwyn, and Waye. We must not forget John Huddle, a wealthy vintner, who, in 1604, founded almshouses for eight poor people. William Stevens, his son-in-law,|| and Anthony Coplestone were also benefactors of the town. We have thus sketched the more ancient history of the town, and pass on to the Commonwealth times, when for a brief space Torrington comes into the general history of the country.

In 1643 "Sir John Digby's quarters were at Torrington, where his forces amounted to about 300 horse and 700 foot. The Parliamentarians at Bideford and Barnstaple, with a superior force of about 1200 foot and 300 horse, under the command of Col. Bennet, proceeded to the attack; but on their approach, being seized with a sudden panic, and thrown into disorder, Col. Digby, taking advantage of this circumstance, not only obtained an easy victory, but pursued his enemy with great slaughter, and took about 200 prisoners."¶ "Those that fled contributed more to the victory than the prisoners or the slain, for they were scattered and dispersed over all the country, and scarce a man without a cut over the

* Now represented through female descent by the Hon. Mark Rolle.

† Now represented through two female descents by Mr. Wellington Furze, of Halesdon.

‡ Now represented through female descent by Sir Stafford Northcote.

§ WESTCOTE.

|| Now represented through female descent by Mr. J. C. Moore-Stevens, of Winscott. ¶ MOORE'S *History of Devonshire*, vol. i. p. 188-9.

face or head, or some other hurt; that wrought more upon the neighbours towards their conversion than any sermon that could be preached to them. Some of the principal officers and of their horse got into Bideford and Barnstaple, and, not considering the inconvenience of acknowledging that God was extraordinary propitious to the cavaliers, told strange stories of the horror and fear that seized upon them, and that nobody saw above six of the enemy that charged them, which proved a greater dismay to their friends than their defeat.*

Traces of the Civil War are found in the parish register. We find amongst the burials in December, 1642, Christopher Ansbery, gent., "born at or by Mere, in Somersetshire, one of Sir Ralph Hopton's troopers, who was killed by the going offe of a muskett unawares upon the main gard, and was buried the xxvth of December, soldier-like." In August, 1643, "seven of the Militiamen that came against Torrington from Bideford and Barstable being slaine neare about Norwood and the Comons, were buried the xxth day." In July, 1644, "Thomas Moncke, gent., Lieutenant to Colonell Thomas Moncke of Poderidge, Esq., being slaine in the South Streete the ixth day about 12 o'clocke att night by some of his own company, by some misprision of the word given, being the ixth day at 12 aforesaid; was buried the xth day." In August, 1644, "Humfry Vanstone on the land being shott by one of the Barstable troopers as he was comming to Church on a Sunday at forenoon prayer from Furze, was buried the xxist day." In February, 1645, "there have been buried the 16th 17th 18th 19th and 20th 21st dayes 63 soldyers." In the year 1646 "Lord Hopton had proceeded to Cornwall for the purpose of increasing his forces, and of collecting provisions for the relief of Exeter, which was now reduced to distress. He returned on the 6th of February, and fixed his quarters at Torrington, where he had not continued above four days before Sir Thomas Fairfax approached with his army. On the 10th this general was at Crediton, where he continued waiting for fresh supplies till the 14th. Thence he proceeded to Chulmleigh, within eight miles of Torrington, with an army of 6000 foot, 3000 horse, and 500 dragoons. On the 16th he had a general rendezvous of his forces at Ashraigney, within six miles of Torrington, and on his march took Mr. Rolle's house at Stephenstone, which was then occupied by a party of king's dragoons. Such was the negligence of the officers and soldiers in the vicinity, that Lord Hopton was

* CLARENDON'S *History of the Rebellion*, vol. ii. p. 208 (fol. ed.).

ignorant of his approach ; but as soon as the news arrived, he lost no time in making the best preparation for a defence of the place, which so short a notice would allow, by drawing together as large a number of horse as possible within, and stationing the rest on a common on the east side of the town. Sir T. Fairfax arrived the same evening, and about eight o'clock the attack began. After a severe contest of about an hour Lord Hopton's cavalry were driven into the town, the barricades were passed, and such was the consternation of the troops within, who were at the same time in part disaffected, that the whole, both horse and foot, immediately fled, leaving their general with a few other officers to provide for their own safety. Lord Hopton and Lord Cassel were both wounded on this occasion, and fled into Cornwall. The next day a terrible occurrence took place. A number of prisoners were confined in the church, where was the magazine with about 80 barrels of powder. These, whether by accident or design is unknown, were set on fire ; blew up the church, and a great part of the houses of the town ; killed about 200 prisoners, and some of the assailants in the churchyard. 600 prisoners, 3000 stands of arms, and the whole of the baggage and money fell into the hands of the victors. A thanksgiving was appointed in London for this victory, which may be justly considered as the *coup de grâce* to the cause of the king in the West.* On this occasion Hugh Peters preached in the Market-place, and with reference to it there was a curious little book published, entitled, "*Man's Badnes and God's Goodnes*, by John Heydon, Minister of the Gospel ; together with the wonderful preservation of His Excellency Sir T. Fairfax, the Army, the Records, the blessed Bible, and the Library of the Town, attested by the Mayor, Aldermen, Capt. White, and Mr. Semer, schoolmaster of Torrington, in Devon." 1647. Not only was the event of national importance, but the worthy Mr. John Heydon got a certificate of the excellence of his sermon : "20 December, 1646. This day Mr. John Heydon, chaplain to the Honourable Col. Gray, did powerfully preach the gospel of Jesus Christ in Torrington Magna, to the great comfort and encouragement of that great audience which was present.—John Voysey, Major ; Richard Gay, John Harwood, John Ward, William White, and Henry Semor." The other certificate is perhaps worth preserving as a specimen of the temper of the times. "We, whose hands are here subscribed, doe testifie that when the publique

* Moore, vol. i. p. 215. Cf. Clarendon, vol. ii. p. 445. The distances mentioned are not quite correct.

place of God's worship was blowne up by a hellish plot, and His Excellencie was wonderfully preserved, there fell out by Divine Providence that which we look upon as a *mira non mirabilia*; viz., that, though the Books of Common Prayer were blowne up or burnt, the blessed Bible was preserved and not oblitterated, although it were blowne away; and also the Librarie and the Books, together with the Records of the Towne, were most wonderfully preserved. I doe testifie, John Voysey, Major. We also testifie, Richard Gay, William White, Capt. John Ward, Henry Semor, schoolmaster."

One consequence of the political changes in the country at large was the appointment to the cure of Great Torrington of the most distinguished minister—with the sole exception of Cardinal Wolsey—which Torrington ever had—John Howe. Whatever may be our differences of opinion on religious subjects, we must all allow that John Howe was a man of rare ability, of exalted piety, of unquestionable honesty, of burning zeal in the great cause which he upheld, and yet withal of a strong common sense, and of a liberalism which could do justice to the merits of opponents. John Howe was so intimately connected with this place, that it becomes necessary to enter somewhat more particularly into the details of his life. He was a B.A. of Cambridge in 1648, and afterwards Fellow of Magdalen College, Oxford. Early in life he was "led, by an unexpected conduct of Divine Providence,"* to use his own words, to Great Torrington, and he succeeded in healing the divisions there. Some idea of his laboriousness may be gathered from Calamy's account of his work on fast-days: "He told me that upon those occasions his common way was to begin about nine in the morning with a prayer for about a quarter of an hour, in which he begged a blessing upon the work of the day, and afterwards read and expounded a chapter or psalm, in which he spent about three-quarters of an hour; then prayed for about an hour, preached for another hour, and prayed for about half an hour. After this he retired, took some little refreshment for about a quarter of an hour or more (the people singing all the while), and then came again into the pulpit and prayed for another hour, and gave them another sermon of about an hour's length, and so concluded the service of the day about four of the clock in the evening with about half an hour or more in prayer." In 1656-7 he went to London, preached before Cromwell, and was made chaplain to the Protector.

* This may possibly refer to the fact of his appointment by ^{adly,} printed Church, though belonging to another college.

In 1660 he was accused before the mayor, Mr. Wellington, of sedition; tried before the Deputy-Lieutenants, and acquitted. The mayor was afterwards brought up before the Deputy-Lieutenants, committed to the Marshalsea, obliged to pay a fee of £3, and bound over. Howe was, however, acquitted by the Judge of Assize. Calamy adds that "one of the accusers soon left the town, and was seen no more; and the other cut his own throat, and was buried in a cross-road." Howe was ejected by the Act of Uniformity on St. Bartholomew's Day, 1662, not so much because he could not conscientiously conform himself, as that he objected to the exclusive character of that famous act. He afterwards published a treatise, entitled, *Delighting in God*, the substance of sermons preached at Torrington, and dedicated with an affectionate letter to the magistrates and other inhabitants. Into the other details of his memorable life this is not the place to enter.

Returning now to the general history, it seems that very little of the church beyond the vestry escaped the effects of the explosion already spoken of. Of the old church, Risdon says that it was "spaciously fair and decently kept," that a library belonged to it, and that in it were "divers exquisite epitaphs to the memory of the deceased." Westcote records one or two specimens. Mr. John Greenwood was four times mayor, and died 28th April, 1619. The inscription on his monument was as follows:

"Invida mors quamvis jungi non amplius uno
Non sinat in thalamo, non vetat in tumulo.

Sylvæ fui quondam viridis, nunc arida; tempus
Cum viror et vires restituentur, erit."

In 1651 the church was rebuilt.

In 1660 the famous George Monk was created Duke of Albemarle and Earl of Torrington and Baron Monk of Potheridge. The title became extinct in 1688.

In 1665 Tristram Arscott, Esq., gave the Hospital of St. Mary Magdalen, founded at Taddyport by Lady Anne Butler, to Great Torrington, and to the churchwardens of Little Torrington, Joseph Coplestone, Esq., and another.

In 1671 Mr. John Lovering founded the Charity School.

Early in the next century Mr. Samuel Johnson, of a Berkshire family, was perpetual curate of the parish, including St. Giles, and rector of Little Torrington. He was a man of great piety and ability, and his *Sermons on the Resurrection* are even now occasionally referred to. His grandson, Mr. Daniel

Johnson, an eminent surgeon, published a book of some value and interest on Indian field sports, the only book, as far as I know, which was ever printed and published at Torrington.* Later in the same century the town received a sort of reflected lustre from the fact of two sisters of Sir Joshua Reynolds having married two of the principal inhabitants—Mr. John Palmer and Mr. William Johnson. The great painter visited his friends here from time to time, and on one occasion brought with him his friend the great Dr. Samuel Johnson. An anecdote told me by an old lady who remembered the occurrence, showed that the ordinary reports of the great moralist's rudeness were not exaggerated. Without entering into particulars, it is enough to say that, when introduced to the master of the grammar school, he turned his back upon that gentleman with much scorn, saying that he did not like his name.† Mrs. Palmer was the authoress of a *Dialogue in the Devonshire Dialect*, which has been twice edited, with glossaries, and has been lately reprinted under the title of *Devonshire Courtship*.‡

In 1816 the monument on Castle Hill was erected to the memory of the heroes who fell at Waterloo.

In 1823 the Torridge Canal was cut at the sole expense of John Lord Rolle.

In 1830 the present tower and steeple were built. The one, which was of a peculiar shape, stood at the principal entrance on the south side.

In 1835 the old corporation ceased to exist. One would have more particular accounts of their doings in the history. There is extant a ludicrous mayoralty speech for 1784, by Mr. Colby, from which it appears that the corporation was not in very good repute. It commences

“...st, I'd have you to know that tho' this corporation hath of late been run down as the worst in the nation.”

Members of the corporation seem, as far as we can judge, to have fully enjoyed the good things of this life, and pro-

Sketches of Field Sports as followed by the Natives of India, &c. By Daniel Johnson, formerly surgeon in H. E. I. Company's service, &c. London: Longman, Hurst, Orme, and Browne; and Thomas Fowler, Great Torrington, Devon. 1822. This book reached a second edition.

† This was the Rev. Mr. Wickey, the last master of the grammar school, which was held at the Town Hall. There was no family connection between Dr. S. Johnson and the Torrington family of that name.

‡ First by Mrs. Palmer's grandson, Sir James F. Palmer (1837); secondly, with more complete text, by her daughter, Mrs. Gwatkin (1839); and reprinted by Mr. Wood, Devonport (1869).

bably managed things as best suited themselves.* The last mayor was Capt. Thomas Colby, R.N. The first members of the new corporation were: Mr. John Sloley, Mayor; Lord Rolle, Richard B. Rouse, George Walker, and Edmund H. Caddy, Aldermen; Charles William Johnson, Capt. Thomas Colby, William G. Wills, Thomas Snell, George Doe, Richard Braginton, Thomas Kingdon, John Adams, Joseph Bangham, and Thomas Fowler, Councillors.

In 1839 the top of the steeple was blown down by a violent hurricane. In 1843 the new road to Little Torrington was made at the expense of Lord Rolle. In 1842 the new market was opened. In 1855 the new cemetery was made. In 1864 the church was restored by subscription. In 1871 the new waterworks were completed. In 1872 the railway was opened from Bideford. In 1875 the Devonshire Association held its annual meeting there.

APPENDIX OF ARMS.

Barons of Torrington. Gules, two bars, and in chief a lion passant or.

Borough of Torrington. Argent, two bars wavy, over all a fleur-de-lis, and within a bordure engrailed, all sable.

Bryan. Argent, three piles fitchée in point azure.

Byng (Viscount Torrington). Quarterly sable and argent, in the first quarter a lion rampant of the second.

Christ Church, Oxford. Sable, on a cross engrailed argent a lion passant gules between four leopards' heads azure; on a chief or a rose of the third, seeded of the fifth, barbed vert, between two Cornish choughs proper.

Coplestone. Argent, a chevron engrailed gules between three leopards' faces azure.

Fortescue. Azure, a bend engrailed argent, cotised or.

Goodwyn. Or, a fesse between six lions' heads erased gules.

Herbert (Earl of Torrington). Per pale azure and gules, three lions rampant argent.

Howe. Argent, a fesse between three wolves' heads erased sable.

Martin. Argent, two bars gules.

Merton. Azure, three bends argent.

Monk (Earl of Torrington). Gules, a chevron between three lions' heads erased argent.

* The following is a New Year's-day bill of fare: 1. Fish, ducks, fowls, Christmas pies, ham, pikeon pies, beef. Second course: Wild fowls, sturgeon, lamb, tarts, hare, pudding, turkey. Supper: Lamb, stewed scollops, wild fowl, capons.

Richmond, Margaret Countess of. 1 and 4; azure, 3 *fleurs-de-lis* or. 2 and 3; gules, three lions passant guardant or.

Risdon. Argent, three bird-bolts sable.

Rolle. Or, on a fesse dancettée between three billets azure, each charged with a lion rampant of the field, as many bezants.

Stevens. Per chevron argent and gules; in chief two falcons rising proper, belled or.

St. John of Lapford. Argent, a bend sable, on a chief gules two mullets or, within a bordure engrailed of the second.

Sully. Argent, two chevrons gules.

Tracy. Or, two bendlets gules. (William Tracy, or, an escallop in chief sable between two bends gules. Pole.)

Umfraville of Lapford. Gules, crusilly and a rose or.

Way. Azure, three luces hauriant argent.

Wellington. If this family was a branch of the Wylyngtons of Umberleigh, the arms would be: gules, a saltire vair.

THE EXAMINATION OF TWO BARROWS NEAR TORRINGTON.

BY GEORGE DOE.

(Read at Torrington, July, 1875.)

In the year 1867 a partial examination of two barrows, situate in the parish of Huntshaw, about two and a half miles from the town of Great Torrington, was made by my friends, the late Mr. Henry Fowler and Mr. Samuel Pearce; and an interesting paper, relating chiefly to the eastern barrow, was read by Mr. Fowler at the meeting of the Devonshire Association held at Barnstaple in that year, which concluded thus:

“Our want of success in finding any such remains as urns or kists may be attributed to the possible fact, that they were placed in some part of the bed of the barrow *out* of the centre; for in such a case it is evident that numerous cuttings might be made without coming across them. We have hopes, therefore, that some remains will still be found, and the more so as the perfectly undisturbed state of the portions already examined precludes the idea of the barrow having ever before been opened.”

Subsequently to the Barnstaple meeting, Mr. Fowler and I had frequent conversations on the subject; and when it became known that the Association would meet at Torrington, we decided on making a thorough examination of the barrows, with a view to the production of a sequel to his paper. Had his life been spared, I should have remained in the background, and an account of the further exploration of the barrows would probably have come from the able pen of Mr. Fowler; but as that could not be, I have felt it an almost religious duty to offer this imperfect effort as my humble tribute to his memory.

The necessary permission of the Honble. Mark Rolle, the landowner, and of Mr. Webb, the tenant, having been obtained, workmen were engaged, and operations commenced

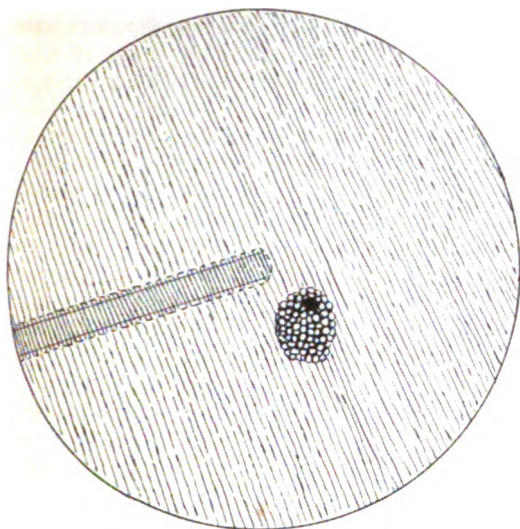
a few weeks since, under the intelligent superintendence of Mr. Alexander McKelvie, the district highway surveyor, at the western extremity of the western mound (into which a short cutting had been made in 1867, as shown by dotted lines on the accompanying plan), and continued for two days, during which rather more than a half of the mass was removed without any further result than a confirmation of Mr. Fowler's statement, that it was composed almost entirely of one homogeneous mass of clay, with occasional streaks of charcoal, covered by a capping of stone. The clay, which could not have been found on or very near the spot, had evidently been worked or puddled. It could be cut as easily as cheese, being quite free from stones or grit, and varied from a whitish-grey to a bright orange colour; but the streaks of charcoal contained occasional small pieces of brittle red stone, which appeared to have been burnt with the charcoal.

On the third day the workmen had not cut far into the eastern half, when they came upon a rounded heap of stones, measuring ten feet from north to south, and twelve feet from east to west at the base, and four feet in height, the top being three feet below the surface of the barrow. A careful removal of these stones—which appeared to have been “acre stones,” and were as clean as when first collected—revealed, in the centre of the heap, a small empty chamber, so rudely constructed that it fell in on the displacement of the covering stones. At the west of this, but on a lower level, another chamber was discovered about eighteen inches square, and nearly a foot in depth, covered by a stone of the same kind as, but much larger than, those forming the pile. This chamber was nearly filled with fragments of burnt human bones, and decomposed matter, which may perhaps be the remains of a cloth or skin in which they had been wrapped. Nothing else was found in this chamber, which was floored with flat stones placed on the original surface of the land; nor was any further discovery made among the stones, nor in the mound, the outer and less elevated parts of which were carefully probed with an iron bar. The ease with which the clay had been pierced suggested that in the exploration of the eastern mound (through which a cutting had been made in 1867, as shown by dotted lines on the plan) considerable labour might be saved; and the iron bar was accordingly sunk again and again into the portion of the mound corresponding with that under which the interment had been made in its western neighbour. After numerous

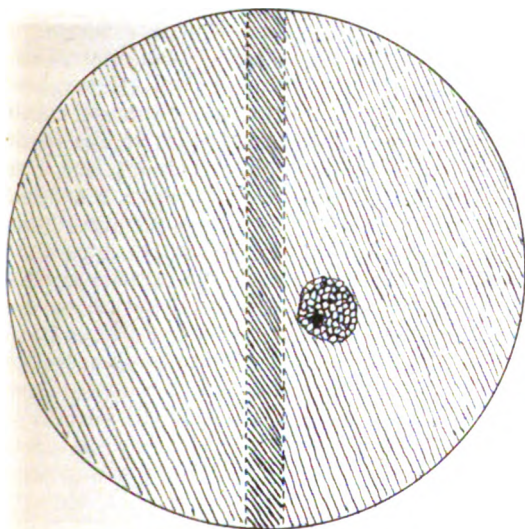
trials, a spot was at length reached where the gentle insinuations of the iron were arrested at a depth of about two feet. A circular excavation was then made through the capping of clay and the underlying beds of earth and charcoal, which soon brought to light a heap of stones similar to that already described, except that it was circular, with a diameter of eleven feet at the base, and that there was a slight depression or sinkage in its northern half. After the removal of about one half of the heap, pieces of burnt human bones, mixed with ashes and earth, were found between the stones, gradually increasing in number towards the south, where, in a small imperfectly-constructed chamber, was discovered a flat mass of damp leaves, so perfect that they were immediately recognized as oak and beech. Whether they originally formed a chaplet, or in what other form, or for what purpose they were placed there, I will not hazard a speculation. A little further towards the south one of the workmen observed something pointed protruding two or three inches, which he tried to pull out, but fortunately he was unable to do so. The stones above it having been carefully removed, a bronze dagger, which at first sight I mistook for a spear-head, was disclosed lying on a flat stone with its point towards the east. Adhering to each side of it were found some very thin pieces of decayed wood, which undoubtedly had formed part of the sheath. They have been preserved; and a more minute inspection of them will, I believe, confirm this view. At the broad end of the blade are three rivets, by which it had been attached to a wooden handle, the shape and grain of which may be distinctly traced on each side. A small quantity of decomposed wood, in which were found two rivet-heads, extended a few inches over the face of the stone on which the weapon lay; but no trace of a staff could be seen. The dagger is nine and a half inches in length, and two and a quarter inches in width at its broadest part, becoming narrower by a double curve of each edge towards the point. Its present weight is barely eight ounces; but it must have become lighter by the corrosion of its surface, which, however, is still in a wondrously good state of preservation. About a quarter of an inch from the edge two sunk lines, forming a thread, surround the blade, the space between the outer line and the edge being fluted like a modern sword.

Similar daggers are figured in Mr. Llewellyn Jewitt's *Grave Mounds and their Contents*, p. 132, and in Mr. W. Copeland Borlase's *Nenia Cornubiae*, p. 236; both of which appear to

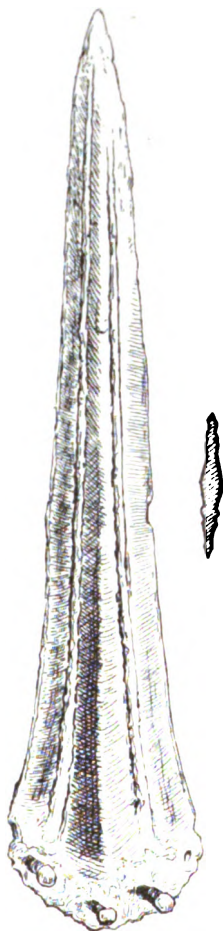
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ONE HALF ORIGINAL SIZE.

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SCALE 22 FT. TO AN INCH.

THE NEW
PUBLIC LIBRARY
ASTOR, LENOX AND
TILDEN FOUNDATIONS.

be far more imperfect than the one I have attempted to describe.

As no interment was discovered in 1867, our late operations drew down some contempt and pity from outsiders. The workmen were almost ashamed to undertake the job, because their predecessors had been ridiculed for their pains. One gentleman made the flattering remark, that those who talked of opening the barrows must be either knaves or fools; another attributed the mounds to some enterprising brick-maker, who had come to grief, and stopped his works; a third referred them to the old charcoal-burners; another *knew* that they had been made for a pleasure-ground; whilst one fully charged with English history offered a solution of the mystery by suggesting that they were thrown up during or after a battle in the time of the Great Rebellion.

It may be easily imagined, then, how gratifying was the discovery which has thrown some light on what was previously veiled in obscurity. To my mind there is now not a shadow of a doubt that these barrows were erected by our Celtic ancestors before the Roman occupation of Britain, and during the period designated by archaeologists as the Bronze Age. Should any doubts, however, be entertained on this point, they will, I believe, be dispelled by a perusal of Sir John Lubbock's learned exposition of the reasons why our bronze weapons cannot be referred to the Romans, in the first chapter of his *Pre-historic Times*. But the dagger, which as a specimen of art-manufacture would not be discreditable to the present century, was probably the handiwork of a race of higher civilization than the builders of the barrows could lay claim to, and imported by one of the merchant adventurers who in that early age visited the tin-producing counties of Cornwall and Devon.

I may add that the investigation of these barrows has afforded another proof of the necessity for examining every part of a sepulchral mound before passing judgment on its character and contents. It is a curious fact that each of the cuttings made in 1867 went within a foot of the interment.

THE FAUNA OF DEVON.

PART XII.

FISHES.

BY R. PARFITT.

(Read at Torrington, July, 1875.)

"THE earliest good evidence," writes Professor Owen, "which has been obtained of a vertebrate animal in the earth's crust is a spine of the nature of the dorsal spine of the dog-fish (*Acanthias*), and a buckler like that of a placoganoid fish. Both these have been found in the most recent deposits of the Silurian period in the formation called Upper Ludlow Rock." This, then, is the starting-point, so far as we have actual proof, but it must not be supposed that this was the beginning of the class; for, considering the high organization of the dog-fishes, and of their carnivorous habits, there must have been other fish anterior to these, or that the habits of these earlier dog-fish were different from those that succeeded them.

In the same formation has been found numbers of jaws and cutting-teeth of *Plectrodus mirabilis*, fish of evidently predatory habits. They may not, it is true, have confined themselves to preying entirely upon other fishes, but their sharp cutting-teeth indicate habits of a predatory character.

Again, in the same beds are found formidable spines belonging to a genus called *Onchus*, and, as Professor Owen remarks, "we may infer that there co-existed a larger and more powerful predatory fish against whose attacks the *Onchus* was thus defended." This, then, would seem to prove that, although the finding of these remains in this early time, geologically speaking, these were not the beginning of this class of animals. Fish, like the inhabitants of the air, are free to move wherever they please without let or hindrance of any kind; and yet with this entire freedom a great many

of them are exceedingly local, they seem almost as if they had been created upon the spot they inhabit, and have never removed from it; and, on the other hand, there are others that have a "roving commission," and have almost a world-wide reputation. As a rule, the most beautiful coloured fishes are found around the coral reefs; and as the coral-reef builders are confined to the warm seas, so consequently are the fish. The bright sun-light and warm seas seem necessary to the development of brilliant colours. The limited range of the majority of fishes, both of those inhabiting the sea as well as those inhabiting the rivers, is a question which should engage the attention of those interested in the distribution of animal life. In the sea, the different species appear to be located in accordance with the food on which they live. One seems, as it were, created for the other. And many of those in the large river systems limit themselves to a very narrow range; they cannot leave their respective rivers, as they are barred at the mouth by the salt water of the sea. The question may be asked, How did they get into these rivers at first? Were they created for the respective places in which they are found? In a word, Where did they come from?

The river systems, I presume, are not now the same as they have always been, but that with every subsidence of the land, so that it became submerged by the sea, would not only destroy all the fresh-water inhabitants, but the course of the river would in all probability be destroyed. Such then being the case, whence come the fish found in these rivers? Were they formerly inhabitants of the sea, and have they by degrees adapted themselves to the fresh waters? I think it very probable that this is the case. There are several species found in our tidal rivers, the Axe and the Exe, for instance, which seem able to adapt themselves to either condition. Thus we have the salmon, sea trout, bull trout, parr, flounders, dabs, lampreys. Flounders have established themselves in Slapton Ley; and eels adapt themselves to either condition. The majority are said to leave the ponds and rivers and proceed to the estuaries, within the influence of the tide, to deposit their spawn. And this is certainly true to a very great extent, as I have seen thousands of young eels making their way over the first weir on the Exe, at the Salmon-pool, and they are always seen going in one direction; namely, upwards. It would seem from this, that the eels cannot entirely forsake their old haunts and the salt water altogether, but return to it occasionally; and, on the other hand, the sea water does not appear to be an absolute necessity to the life of those species.

Specimens of *Salmo fario*, or the common trout, frequently descend to the sea, and assume a bright silvery colouration, with numerous cross-shaped spots.* One of the mullets, *Mugil capito*, is found in the fresh-water lakes at Tunis as well as on the British coasts; and a species of the genus *Chromis* is found equally common in the fresh as well as the brackish waters in Africa. And I have caught our common little stickle-back frequently in the brackish water-ditches in the Exminster and Topsham marshes. The latter ditches are flooded with salt water during high tides, so that it would seem that many species can accommodate themselves to what would at first seem extreme conditions. In the voyage of the *Pelorus*, the voyagers found, in some small lakes on the south coast of Greenland, at an elevation of 1800 feet, some marine crustaceans in these fresh-water lakes, and from this they argue that this land has been gradually lifted up from the ocean bed. The sea water could not originally have been salt if, as we believe, it was normally produced by the combination of two gases, as no salts are found in the combination now, when water is produced by the uniting of these gases. It is necessary to suppose, then, that the earliest sedimentary rocks, the Cambrian, or even, to go still further, the metamorphic Laurentian, charged as they are with carbonaceous matter, were produced by the action of the sea upon pre-existing rocks; or are these the result of the disintegrating effects of rain and other atmospheric conditions, carried and at length deposited in the sea? And have we any evidence that at this early time (not the earliest) that the sea was then salt? So far as we can judge of the few organisms that have been preserved to us, I do not think that it can be proved either way.

Devonshire is peculiarly well situated for obtaining a good supply of fish, both from its streams and from the long coast line; and of the two hundred and ninety-two species enumerated by Mr. Couch in his *British Fishes*, scarcely all, perhaps, can be considered indigenous, as some only put in an appearance at rare intervals.

Our streams, as a rule, do not contain so many species of fish as those of the midland and eastern counties. The Exe produces twelve or thirteen species, exclusive of those found below the Salmon-pool, such as dabs, flounders, &c., those that are not, strictly speaking, now to be considered fresh-water species, although they live in the latter much longer than they do in the brackish water, on the mingling of the tidal

* *Brit. Mus. Cat., Fishes*, vi. p. 357.

with the river water, for many of the tides scarcely reach them at all.

The Axe has about the same number, omitting those as before said.

Great exertion has been made of late years for the cultivation and better preservation of our river fish, but more especially the salmon. And it must be admitted that this has not been all labour in vain; for there is a better supply of this fish now than there was before this movement was set on foot. At the same time, with this increase in the quantity of this food, it does not reduce the price of other food, and it must now be considered a luxury. The average price per pound is 1s. 6d. The number of salmon taken in the Exe, so far as I could ascertain, in 1872 was about 2880 fish, averaging in weight from 6 to 17 or 18 pounds per fish. The year 1873 was not so good, either in the North or South Devon streams. The year 1874 yielded a very good supply, more especially from the Exe and Dart. Mr. F. Gosden, fishmonger, Exeter, received 490 fish from these two rivers; namely, 290 from the Exe, and 150 salmon and 50 peel from the Dart. Messrs. Sanders and Sachell, fishmongers, St. Martin Street, had this year (1874) only 20 fish from the Exe; but they received 1 salmon and 200 peel from the Axe, 100 salmon from the Dart, and 140 from the Torre and Torridge. These numbers must be taken only for these fishmongers; there are others in the city who probably also received fish from these waters.

The fishing season closes for nets on September 1st for all the rivers except the Torre and Torridge; these do not close till the 16th, they being later rivers; but they may be fished with rod and line up to November 1st.

In 1873 great numbers of peel were taken in the Axe, locally termed "harvest peel," and weighed on the average from 1½ lbs. to 2½ lbs. each. One gentleman alone took forty with the fly; and the Yarty, a tributary of the Axe, was full of them. Many went through the sluices into the water meadows and died. Salmon were this season exceedingly scarce. Five licenses were taken out by fishermen, but only one fish was captured. This river is a very late one, the fish do not ascend till September and October.

I was informed by fishermen that in May, 1873, the Exe was literally full of "graveling"—more than they had ever known before, although they had fished the river all their lives. But salmon were very scarce, both in the river and in the estuary.

Dr. Peard has written some elaborate articles in the *Bath and West of England Society's Journal*, 1867-68, on the cultivation and production of fish in our rivers. His object chiefly is to show what these waters are capable of producing and sustaining in the way of salmon and salmon fry alone. And he begins by saying, "that in fact no district in the kingdom possesses greater natural advantages for fish culture than the county immediately under consideration." Dr. Peard begins with the Lynn, and after speaking of the beauties, &c., he says, "from its source to the sea it scarcely affords any impediment to the passage of the fish, certainly none which a few pounds of gunpowder would not remove. The water is of great purity; spawning-beds abound; whilst the rocky, irregular channels afford security to the 'smolts.'" From a calculation, based on data sufficiently accurate for our purpose, we have no hesitation in saying that a stream of the length, purity, and character of the one under consideration ought to produce during the season about nine tons of salmon from the operation of the natural system alone; whereas we doubt whether it now sends as many hundredweight to market. This nine tons of salmon ought, according to this author's calculation, to produce £672. The Taw and Torridge should produce, on the same authority, from sixty to seventy tons, worth £6,900. The Tamar is at present *nil*, on account of the mine water, but capable of producing from thirty-five to forty tons; the Avon from twelve to thirteen tons. The Dart at present yields about ten tons, but is capable of yielding seventy, and the receipts ought to be for this about £7,000 per annum. The Teign is capable of producing eighteen tons; the Exe and its tributaries, from eighty to ninety tons; the Otter, eleven tons; and the Axe, from sixteen to seventeen tons. Yielding a total of 25,330 tons, These available rivers for fish culture, according to Dr. Peard, amount to about 714 miles of water. Let us take one of the arguments used by Dr. Peard to show the value, as estimated by him of one or two of our rivers. He says, "It has been stated, we presume on authority, that an acre of good land produces, under the plough, a ton of corn in the year, or, if in pasture, two hundredweight of beef or mutton." Now, the profitless Tamar district contains at least 170 miles of water, by far the larger part of which is unquestionably of great purity, and in all respects admirably suited for raising salmon. Such an extent of river ought to yield, on a very moderate calculation, eighty tons of fish per annum, an amount of animal food equal to that derivable from 800 acres of

really good land. Such waste is indeed sad to contemplate. Yet I cannot help thinking that Dr. Peard has much overdrawn his statements as to the quantity of salmon producible on his data for the various rivers; for let any one visit our rivers during dry seasons, and then say what they are worth. The most we could say of them then would be, that they are, to a certain extent, breeding rivers. The Exe, for instance, is frequently reduced so much in a dry season that for weeks no water passes over the weirs, and in rocky parts of the river bed it is reduced to so many stagnant pools; and yet Dr. Peard says, "The Exe, with its tributaries, gives about 175 miles of water, which, perhaps, is inferior to none in the kingdom for the purposes of breeding fish." Following the standard of comparison laid down for other rivers, the Exe ought to yield between eighty and ninety tons of salmon; but the returns are comparatively small, probably on the average not more than about 500 to 600 fish from all sources. The facts are therefore opposed to the theory. This season (1875) opens better for the Exe than usual, owing, probably, to the generally flooded condition of the river during March and the early part of April. The fishermen at the estuary were not able to take the fish as they came up, and they accumulated below the Countess Weir Mills; so much so, that Mr. Martyn, the proprietor of the mills, captured twenty-one in one haul of the net. The fish were small, averaging from seven to ten pounds each. The Axe, again, represents about fifty miles of water, and, according to the calculations made by Dr. Peard, ought to yield from sixteen to seventeen tons of salmon, but it is in reality almost unproductive for this fish.

The Mole and the Taw, or rather the fishing at the weirs, is estimated to produce about £700 per annum. "Meanwhile," says Dr. Peard, "let us endeavour to ascertain at what cost this sum is obtained. The river presents about one hundred miles of water, and with ordinary care is capable of producing between sixty and seventy tons of salmon during the season; or, in other words, would represent about £6,900." All I can say is, that the fishermen would be heartily glad to take the £900 for any season we could name.

A calculation, as per ton of fish for so many miles of water, will, I think, not meet the facts of the case, but that we must look to our rivers as breeding rivers, viewing them as a whole; and by protecting the parent fish, as well as the young, we are then encouraging them to come into our estuaries, where the chief numbers of serviceable fish are taken.

Before quitting the subject of the salmon, I cannot help quoting an anecdote from Brice's *Universal Dictionary* (1769), pp. 430-40. He says: "The salmon of both, for numbers and goodness, are remarkable, especially those of the *Exe*, which gave occasion once for a pleasant pun even in the Court of Assize for the county of Devon; for his lordship the judge having noted a pleading barrister, who seemed to carry his argument too far, remarked that 'nothing was good in *extremes*.' The counsellor returned, 'Yes, my lord; there are in *Ex-streams* the best of salmon.'"

The food of the salmon, so far as I know, has never been properly ascertained. It has given rise to a great deal of speculation and discussion. Mr. Sachell, fishmonger, St. Martin's Street, Exeter, informs me that he has taken an eel about a foot long from the stomach of a salmon. The eel was partly digested. He has also taken a carp from the stomach of a salmon caught in the Hampshire waters; and this morning (May 19th) he informs me that he yesterday took out a half-digested grey mullet from the stomach of a salmon.

A great deal has been said and written about the growth of salmon from the egg towards maturity; but this, like most other things, cannot be confined between hard and fast lines. Thus it is found that there is great difference in the growth in the same batch of young ones, even when hatched under the same conditions, having the same food, and living in the same water. The various phases and dissimilarity which this fish undergoes during its growth from the egg to the mature fish, called forth a remark from the President of the Philological Society in 1872. He says: "Could Darwin have drawn his theory of evolution from geological data? Geologists all exclaim that geology furnishes no transitional forms. Would geologists recognise them as transitional if they found them? I am afraid that the history of the salmon would lead us to think otherwise." (President's Address, p. 25.)

This query, "Would geologists recognise the transitional forms if they found them?" Well, perhaps not; for the bones of the head of fishes undergo various modifications during the growth of the fish. But I do not see how this is to affect the study, or the general conclusions drawn from Nature's great book. Even if distinct names were given to the various developments of the salmon, it would only increase the number of *supposed* species; and, so far as I can see, it would not affect the great order of things further than that.

Dr. Gunther says (*Brit. Mus. Cat.*, vi. p. 3): "There is no other group of fishes which offers so many difficulties to the

ichthyologist, with regard to the distinction of the species, as well as to certain points of their life-history, as this genus." And I may add, that there is perhaps no man better able to judge of the difficulties than this naturalist, or that has had greater experience than he has. Notice is taken by Mr. Couch and others of salmon having teeth on their tongue; but, so far as I know, no one has taken notice of salmon of the same size, and apparently of the same age, having no teeth on the tongue, this organ being perfectly smooth. I have examined many this season, and I find almost as many smooth-tongued ones as those having teeth. This is not a sexual peculiarity, as I find them about equal. The fish I examined weighed on the average from eight to fourteen or sixteen pounds each.

Salmon are frequently infested with several parasites, which must torment them greatly. First we find their gills infested with *Lerneopoda salmonea* (Linn.). These are called lice by the fishermen. Then we find another, called *Lepeoptherus stromii* (Baird). These mostly attach themselves to the under side of the body, generally from the ventral fin to the tail. I have been informed by a gentleman who takes great interest in this fish, that they are occasionally infested with a kind of leech, and that this creature appears always to select the best and fattest fish; indeed the best fish may be known by the parasite being on it. I have not been able to obtain a sight of this parasite, and therefore cannot state what it is.

Again, the intestinal canal is sometimes infested with *Bothriocephalus proboscideus* (Rudolf). In July, 1874, Mr. Gosden, fishmonger, drew my attention to two parasites on the liver of a salmon. These were white leech-like creatures, about an inch and a half long; the head furnished with four ear-like appendages. Round the oral apparatus are placed four white ivory-looking globes, set all over with dreadful recurved hooks, and it is by these that the creature holds on to the place selected, by burying them in the liver of its victim. This creature is called *Tetrahynchus solidus* (Drummond), and was first described by him in *Charlsworth's Magazine*, ii. f. 29, p. 573. Why should these poor fish be so punished? What have they done?

The next best fish of our rivers is undoubtedly the trout. This has of late years been falling off in numbers. Some attribute this to the pollution of the water by the paper-mill owners discharging their refuse into the river. That this is the case no one can deny. At the same time, I have myself gathered up, below Countess Weir Mills, numbers of dace, but I never found a trout. I chanced one day to be down

below the mills after a very high tide, and there were thrown up on each side of the river a great number of dace, and dace only. I said to a man that belongs to Countess Weir, and who came into the meadow where I was, "How is it that this stuff from the mill does not kill the trout as well as the dace?" He said, "Sir, the trout keep close to the bottom, and out of the way of this stuff. As that floats on the top, it does not hurt them." And I am inclined to think that there is really something in this.

I have heard it frequently stated by fishermen that the trout is somewhat chameleon-like; that is, can change colour or adapt itself to the environment in which it may chance to be thrown; and Mr. Savile Kent somewhat confirms this in some marine fish in the Aquarium at Brighton. Mr. Kent says (*Nature*, May 8th, 1873): "In the spawning amongst the *Acanthoptergian* group the fish undergo very remarkable changes in colour. Thus the black bream, or old wife (*Cantharus lineata*), hitherto had been silvery blue, veined by irregular longitudinal lines of pale yellow. These light colours had now disappeared, or rather become absorbed in a prevailing shade of deep leaden black, which, while deepest on the back, spreads itself over the whole surface of the fish, with the exception of a few transverse lighter bands in the region of the abdomen. The males in particular are the most conspicuous for this change, and for their retiring from the remainder of the shoal and selecting certain separate and prescribed areas at the bottom of the tank, where they commence excavating considerable hollows in the sand and shingle by the rapid and powerful action of the tail and lower portion of the body. A depression of suitable size having been produced, each male now mounts guard over his respective hollow, and vigorously attacks any other fish of the same sex; towards the opposite sex he is very different."

On the other hand, we know from observation that the males of some other fish put on a nuptial dress of the most brilliant colours; for instance, the common stickleback of our ditches is quite a little gem during the time that the eggs of the female are hatching, and he keeps the most vigilant guard over the nest; and if perchance another male should show himself in the neighbourhood of the nest, a terrible battle ensues. I have watched these little pugnacious fish during some of their encounters, and it is curious to observe that the colour, which before was very bright over their head and throat, grows of a more intense crimson-red, as if they grew red with passion, which I believe they do (?) That this

bright-coloured dress is put on during the nuptial season can easily be observed by anyone keeping these little fish in a healthy condition in a tank or aquarium, and that the colour again fades away as the young are hatched, and are more or less left to themselves. Indeed, it is the same as we see in the males of both birds and other animals. To birds that are not adorned with gay feathers is given the gift of a sweet voice; with this they charm their chosen one with song. So that the *Cantharus lineata* observed by Mr. S. Kent is, I believe, rather the exception than the rule, that fish put out or change their bright colours for more dingy ones during the mating season. At the same time, it is good evidence that they can and do change their colours at certain times; and it would seem that these males, instead of keeping sentry in a gay or conspicuous dress, seek concealment, or lie in ambush, as it were, in a dull rifleman's dress.

In 1872 the change of colour in fishes received some elucidation from the experiments of M. Georges Pouchet, in a paper read to the British Association, held at Brighton. In this the author asserted that "the change of colour in fishes is dependent upon and received by the nervous system through the organs of vision. He found that turbot, if blinded, did not change colour; but those not deprived of sight did. If the nerves be divided which communicate between the eye and the skin, the change is not effected; if, on the contrary, the fifth nerve is divided, the change takes place all over the body, except the part to which that nerve is distributed." *

It would seem, therefore, that the colours of fishes are under the control of the creatures themselves to a very great extent, if not entirely so. If this be so, we must grant to the fish a much larger share of intelligence than is generally given to them; for if they can change colour to suit the environment, it would seem that it was done as a means of protection (?); but whatever it may be for, the very fact of its being so gives to the fish a higher place in the intellectual world. For instance, if a trout gets into a part of the river to which he is not adapted, or where his colours are too bright for his surroundings, and he is rendered too conspicuous by this dress, he must of necessity reason with himself as to the desirability of reducing this colour, and therefore render himself less conspicuous and less liable to be detected. Fish would seem to have, according to M. Georges Pouchet, a set of nerves which act upon the pigment vessels.

* *Popular Science Review*, October, 1872.

There is as great variety among fishes in the modes adopted for the production of their young as there is amongst terrestrial creatures. Thus says Professor Agassiz, in a lecture delivered at Harvard College: "The spawn of a single herring is made up of hundreds of thousands of eggs; other fishes only lay a few dozen at a time. Some let their spawn fall into the water, others make nests, and others carry them until the young are fully developed. Some cat-fish carry their young in the mouth till they can provide for themselves. Certain fishes carry their young along their gills, the young going in and out at will through the gill cavity. Some carry them attached to the surface of the belly, or under the tail; and among the pipe-fishes, strange to say, this office devolves upon the males." In the "Report of the Marine Fauna and Flora of South Devon and Cornwall," given to the British Association by Mr. J. Couch, under the section "Fish," special notice is taken of a double-spined ray. The specimen is preserved in the Museum at Plymouth. Mr. Couch says: "The ray was taken off Plymouth, and appears to coincide nearly with that of *Raja aquila* (Linn.), except in being very much larger, and in the presence of two spines."

One point of interest that belongs to this specimen is the relation it bears to *R. attavella* (L.). Consulting Artedi, and after him Linnæus, and comparing them with Lacépède, I find generally, as characters common to *R. aquila* and *R. attavella*, the body smooth and a slender tail. Linnæus says *R. attavella* often has two spines; but Lacépède makes the same remark of *R. aquila*. The material difference is, that *R. aquila* has a very long tail, while *attavella* has it even less than half the length of the body. According to Lacépède (who says nothing of a short-tailed eagle ray), the pectorals of his *aquila* are gradually slender, like the wing of an eagle; but Artedi says that in *attavella* the pectorals are broad.

In the *Systema Natura* (Gmelin's edition), p. 1509, the double-spined ray is made a variety of *R. pastinaca*, and is named *R. altavella* (B.) (not *attavella*, as written by Mr. Couch), and described thus: "Raja corpore glabro, aculeis duobus postice serratis in dorso apterygio." Donovan, in his *British Fishes*, has figured the common sting ray with two spines, one of which is larger than the other, with this remark: "As the sting ray sheds its spine annually, and the new spine appears before the old one drops off, we have suspected that the *Altavella* may be only the common kind at that precise period when both spines appear." Bloch gives (tom. iii, p. 59) the various names by which this fish is known in France, Ger-

many, Holland, &c. In Naples it is called *Altavela*, which has furnished the specific name by which it is known to some naturalists. Lacépède (tom. i. p. 117) says: "Premièrement l'altavellé que l'on n'a distinguée de la pastenague qu'à cause de ses deux aiguillons dentelés." But to settle this question as to its distinction from *R. pastinaca*, Dr. Gunther, in *British Museum Catalogue*, has raised it into a distinct genus and species:

"Great differences of opinion are often expressed as to certain forms among fishes, and none, perhaps, have led to more conflicting opinions than the genus *Salmo*, or salmon tribe; and, generally speaking, scarcely any one seems to consider the probability of the disputed forms being hybrids. Hybrids between the sewen and the trout are of no uncommon occurrence, and in several parts of South Wales they have received a distinct name, *Trob-y-dail*—literally, 'fall of leaf'—indicative of the reddish shade of colour, and of the dark brown spots of the male. Most of these specimens have retained the instinct of an annual migration to the sea, and are full of milt or spawn in the autumn, and we have never had an opportunity of observing a naturally sterile individual."

W. Peel, Esq., of Taliaris Park, has stocked for years, with young individuals of this form, a fresh-water pond which has no communication with the sea. They live for years, growing to a length of from fifteen to eighteen inches, but remain sterile throughout their lifetime. (Dr. Gunther, in *British Museum Catalogue*, vi. p. 47.) These Welsh specimens are produced by the "sewen" and that form of the river trout which is named *S. fario Ausonii*. (Ibid, p. 48.)

Now that Cornwall has set the example of utilizing the otherwise over-abundance of pilchards by establishing a factory for making them into "sardines," let us hope that curing-houses will be set up on our north coast, where pilchards are caught in large numbers during the season. That the pilchard is the same as the so-called "sardine" of the coast of Brittany and the Mediterranean has, I think, been fairly proved by Dr. Gunther, although there is a slight difference in them, but not enough to separate them into species. Could the curing of these pilchards, and making them equal to the sardines of the foreign market, and rendering them at a cheaper rate than has been done by Messrs. Fox and Fryer, be firmly established, it would prove a great boon to the community, but they must be rendered cheaper than they are at present. But last year being their first trial of the

manufacture of sardines, we must not complain; but let us hope that it may prove a success, and that it may stimulate the fishermen of Devon to imitate their probable successful neighbours.

I was informed by Mr. Fox, during our discussion of the pilcardo-sardine question, that "during this year nets with a smaller mesh will be used, when the younger fish which now escape will be taken, and all tastes gratified." I need not say that I hope this gratification will not be carried too far, so as in a few years to almost sweep the pilchard from our seas; for if this be carried on to a very great extent, we shall have no breeding fish, and consequently no small ones.

Mr. Bertrum, in *St. Paul's Magazine*, April, 1873, says: "Our haddocks are becoming scarcer year by year, and it has been urged by more than one writer, that our great herring shoals are now being exhausted, or their economy is disturbed so as to render them less productive. In time, it is thought, the vast cod-banks of Newfoundland will become tenantless, so great is the drain upon them. All our misfortunes in the way of diminishing fish supplies, and especially as regards the oyster, may be traced to mal-economy and greed." This is perfectly true, and in the face of the diminishing numbers the catching of small fish still goes on. The oyster, as we know, is now become almost a thing of the past, as regards our British seas.

CATALOGUE.

WITH NOTES AND OBSERVATIONS.

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Class, PISCES, *Auct.*

Order, HÆMATOCRYS.

Sub-Class I., Order I., CIRROSTOMI.

Order II., CYCLOSTOMI, *Dumeril.*

Fam., PTEROMYZONTIDÆ.

GENUS, PTEROMYZON, *Artdi.*CÆCUS, *Couch.*iv. t. 248-404; *Yarrell*, ii. p. 459. Mud Lamprey.

Taken at Plymouth.

FLUVIATILIS, *Linn.**Var.*, p. 464; *Couch*, iv. t. 247, p. 395. River Lamprey.

Taken in the Exe, the Plym, the Axe; sometimes abundant.

Spawn in the spring.

MARINUS, Linn.

Var., ii. p. 448; *Couch*, iv. t. 247, p. 385. The Lamprey.

Taken off Plymouth, Exmouth, &c. One taken in the Exe measured 3 feet in length; Ross MS.

Order II., MALACOPTERI, Buch.**Sub-Order I., APODES, Linnaeus.****Fam., MURÆNIDÆ, Rafn.****GENUS, ANGUILLA, Thunberg.****ACUTIROSTRIS, Yar.**

ii. p. 284; *Couch*, iv. t. 234, p. 326. Sharp-nosed Eel.

In the Axe, the Exe, and most rivers and ponds.

LATIROSTRIS, Yar.

ii. p. 298; *Couch*, iv. t. 236, p. 330. Broad-nosed Eel.

Taken in the Axe and Plym.

MEDIOROSTRIS, Yar.

ii. p. 301. The Snig.

Taken about Plymouth; common; Bellamy.

GENUS, CONGER, Cuvier.**VULGARIS, Cuvier.**

Var., ii. p. 304. The Conger.

Very common along the rocky coast.

GENUS, LEPTOCEPHALUS, Gronovius.**MORRISII, Penn.**

Var., p. 311; *Couch*, iv. t. 238, p. 348. Anglesey Morris.

This is said to have been taken by a Devonshire fisherman.

See Loudon's *Mag. Nat. Hist.*, p. 330.

GENUS, OPHIDIUM, Bonaparte.**IMBERBE, Linn.**

Var., p. 314; *Couch*, iv. t. 237, f. 1, p. 336. Beardless Ophidium.

This appears to be a very rare species on our coast. One taken some years ago, and described in the *Wernerian Society's Mem.*, i. p. 95, t. 4, f. 2, by Col. Montagu, appears to be the only one that has been seen.

GENUS, ANMODYTES, Linnaeus.**TOBIANUS, Cuvier.**

Var., ii. p. 317. Sand Eel.

South coast of Devon; not very common.

LANCEA, Jenyns.

Var., ii. p. 322. Sand-Launce.

Very common all along our sandy shores; used as an article of food from May to October. Taken in great abundance sometimes at Teignmouth.

Sub-Order II., ABDOMINALES, Linnaeus.

Fam., CLUPEIDÆ, Bonaparte.

GENUS, CLUPEA, Linnaeus.

SPRATTUS, *Linn.*

Yar., ii. p. 121; *Couch*, iv. 109. The Sprat.

This little fish is sometimes taken in considerable numbers; at the same time it cannot be considered a common fish with us. Yarrell, however, mentions one instance in 1832, as copied from the *Taunton Courier*, that they appeared in exhaustless schools, close in shore, on the south coast of Devon.

HARENGUS, *Linn.*

Yar., ii. p. 110; *Couch*, iv. pt. 202, p. 9. The Herring.

Bellamy says: "Off the coast in July, and the young are taken about November and December at the mouths of rivers." Couch confirms this. He says: "There are years when large numbers of the best quality are caught in July and August." But the principal fishing for this species is from September to November on our coast.

Mr. Donovan, in vol. v. of his *British Fishes*, very fully discusses the question of the "white-bait" being a distinct species; and after reviewing all the previous writers on this subject, he states his own opinion, and is convinced, from the examination of numbers of specimens in various stages of growth, that the white-bait is the young of the shad, and consequently not a distinct species.

Dr. Gunther describes the white-bait as a purely nominal species, introduced into science in deference to the opinion of fishermen. It has the same number of vertebræ (56) as the full-grown herring, and the same number of lateral scales, and an identical arrangement of the fins and teeth—a combination of characters found in no other fish—which proves sufficiently that these so-called white-bait are the young fry of the herring. Numbers of specimens in various conditions of growth have been forwarded to Dr. Gunther, so that he was enabled to trace the fish from the white-bait condition to the adult form.

Clovelly has gained a reputation for the best herrings, the same as Yarmouth has for the eastern coast. The reason, I suppose, is, that the fish have attained to their highest state of perfection when they reach these respective places?

PILCHARDUS, *Cuvier.*

Yar., ii. p. 96; *Couch*, iv. t. 201, p. 79. Pilchard.

The most abundant fish in the West of England. It has been decided by Dr. Gunther that the sardine and the pilchard are the same fish.

GENUS, *ALOSA*, Cuvier.

COMMUNIS, Cuvier.

Var., ii. p. 136; Couch, iv. t. 204. Allis Shad.

Not a common species. "Brought to market in summer;" Bellamy.

GENUS, *ENGRAULIS*, Cuvier.

VULGARIS, Cuvier.

Var., ii. 140; Couch, iv. t. 206, p. 125. Anchovy.

Sometimes taken in the Exe; Ross MS., i. p. 55.

Great numbers of this delicate little fish were taken off our south coast, November, 1870.

Fam., SALMONIDÆ, Bonaparte.

GENUS, *SALMO*, Linnaeus.

FARIO, Linn.

Var., ii. p. 51; Couch, iv. t. 218, p. 225. Common Trout.

Met with in most of our rivers, but vary considerably in form and in colour. The food of the trout appears to be principally the various kinds of river mollusca, such as *Valvata plicinalis*, *Planorbis marginalis*, *Physa fontinalis*, *Limnæus pereger*; at least these are what I found in the stomachs of some that were taken by Mr. E. Forster in Powderham Park, May 1st, 1863. The flesh of these fish was beautifully coloured, quite as rich as a salmon. On examining the molluscs found in their stomachs, I found the valvatas most abundant, and many of them partly digested. The shells had their apices eroded, and the whorls or body of the shell were thickly pitted with small holes, I presume from the action of the gastric juice of the stomach on the carbonate of lime (?) But the food of the trout varies in different streams; so that the above would only apply to the stream in which they were taken.

Var. B. fario ausonii.

Taken in the Dart, Torridge, and Plym. The number of vertebræ varies in this form from 56 to 58; Gunther, in *Brit. Mus. Cat.*, vi. pp. 66, 67.

SALMULUS, Willoughby.

Var., ii. p. 42; Couch, iv. t. 221. The Samlet, Parr, or Hipper.

Notwithstanding the utter confusion and the great variety

of opinions prevailing amongst observers respecting the young of the genus *Salmo*, the present appears to be a distinct species. It is met with in the Plym, the Yealm, the Avon, and the Dart.

TRUTTA, Linn.

Var., ii. 36; *Couch*, iv. t. 215, p. 214. Salmon-Trout, called also the White Trout.

Taken in both North and South Devon.

ERIOX, Linn.

Var., ii. p. 31; *Couch*, iv. t. 214, p. 211. Sea Trout, Bull Trout.

Frequent along the south coast. Three specimens of this were captured by Mr. De Neicville in the Salmon-pool below Exeter, April 28th, 1864. The largest measured 19½ inches long; girth, 11½ inches; weight, 3 lbs. 9 ozs.

CAMBRICUS, Donovan.

Brit. Fishes, iv. pl. 91; *Couch*, iv. pl. 213. Sewen.

River Torridge, Dr. Gunther; Tamar, Plymouth Sound, &c.

SALAR, Linn.

Var., ii. p. 1; *Couch*, iv. t. 211, p. 162. Salmon.

In all our large rivers, where they resort to spawn. The *Salmo gracilis* (*Couch*, *British Fishes*, iv. pl. 216, f. 1.) is regarded by Dr. Gunther as a variety of the common salmon only, and not a species. Four specimens of this variety are known to have been taken in Devon—three of them in the north, and one in the Exe. These fish have more the appearance of “kelts,” or spent fish; but this is not the case, they are perfectly sound and good; and the captor of one in the Exe (W. B. Scott, Esq.) informs me that it was in capital condition and “of very superior flavour.” See Dr. Gunther’s remarks on this, in *Brit. Mus. Cat.*, vi. p. 12.

GENUS, *OSMERUS*, Linn.

EPERLANUS, Fleming.

Var., ii. p. 75; *Couch*, iv. t. 227, p. 276. The Smelt.

Taken in the Exe; Ross MSS., i. p. 55.

Order III., PHARYNGOGNATHI, Müller.

Sub-Order I., MALACOPTERGI, Linn.

Fam., SCOMBER-ESOCIDÆ, Müller.

GENUS, *SCOMBERESOX*, Lacépède.

SAURUS, Cuvier.

Var., i. 394; *Couch*, iv. t. 208, f. 3, p. 141. Skipper.

This species is known to visit our shores in large numbers occasionally. I saw a great many taken in a sein at Seaton, 1870.

GENUS, *BELONE*, Cuvier.

VULGARIS, Cuvier.

Var., i. p. 391; *Couch*, iv. t. 209, p. 146. Garfish, Sea Pike.

Not uncommon all along our southern coast. Caught in great numbers at Seaton, 1873.

Fam., ESOCIDÆ, Bonaparte.GENUS, *ESOX*, Linn.

LUCIUS, Linn.

Var., i. 383; *Couch*, iv. t. 210, p. 160. Pike.

This fish has been, up to the last few years, supposed to be confined to Slapton Ley; but they are equally common in the Exe, near and above Exeter. They abound to such an extent in the Exe that in certain portions of the river scarcely any trout are to be found.

GENUS, *EXOCETUS*, Linn.

EXILIIENS, Linn.

Var., i. 398; *Couch*, iv. t. 207, p. 128. Greater Flying-fish.

This is an occasional visitor. A fine specimen was taken in Sutton Pool, and is now in the Plymouth Museum.

Fam., CYPRINIDÆ, Bonaparte.GENUS, *THYMALLUS*, Cuvier.

VULGARIS, Cuvier.

Var., ii. 75; *Couch*, iv. t. 228, p. 280. The Grayling.

This species, I have just been informed, has been introduced into the river Loman, at Tiverton (May, 1866), but how it will succeed remains to be seen. It is a local fish in this country, and appears to require particular conditions, as it has not succeeded in many places where it has been introduced.

This fish has no claim as native to this county; but as it has been introduced, it is well to note the fact of its introduction.

GENUS, *CYPRINUS*, Linn.

CARPIO, Linn.

Var., i. 305; *Couch*, iv. t. 180, p. 4. Carp.

In the Exeter Canal, and railway ponds; sometimes taken of large size.

GENUS, *GOBIO*, Rondeletius.

FLUVIATILIS, Willoughby.

Var., i. p. 325; *Couch*, iv. p. 20, pl. 182. Gudgeon.

This has only been known of late years in Devon, it having probably been introduced. A specimen was taken the other day (June 6th, 1873) by Mr. King.

GENUS, *TINCA*, *Rondelitis*.VULGARIS, *Cuvier*.

Var., i. 328; *Couch*, iv. t. 183, p. 22. The Tench.

In the Canal at Exeter, and also in some of the ponds by the South Devon Railway.

GENUS, *LEUCISCUS*, *Rondelitis*.CEPHALUS, *Linn*.

Var., i. 358; *Couch*, iv. 190, p. 44. The Chub.

This, I am informed by Mr. Reading, is taken in Devon.

MYTHROPTHALMUS, *Cuvier*.

Var., i. p. 412; *Couch*, iv. t. — 192, p. 49. Rudd.

It is stated in the *Field* for July 5th, 1873, by Mr. W. E. Moore, that Rudd of over a pound and a half in weight have been taken in Slapton Ley. I have seen specimens of small size captured in the Exe, below Salmon-pool. 1875.

RUTILUS, *Linn*.

Var., i. 348; *Couch*, iv. t. 191, p. 47. The Roach.

In the Canal at Exeter, in some of the ponds by the South Devon Railway, and in Slapton Ley; and very abundant in holes in the river Axe; *Book of the Axe*. The highly-coloured specimens of this are called *Rudd* by the fishermen on the Exe, near Exeter, great stress being laid by them on the very bright red eyes and fins, but particularly the former. I find, however, on carefully comparing these so-called rudd, that they are only highly-coloured roach.

LEUCISCUS, *Linn*.

Var., i. 358; *Couch*, iv. t. 194, p. 54. The Dace.

The most abundant fish in the Exe; also very numerous in the Axe. Large numbers of this fish are killed by the poisonous alkaline "waste" let off from the Countess Weir Paper Mills. Hundreds of them strewed the banks of the river near and below the bridge, May 31st, 1866; and from information I received on the spot, it appears to be a very rare thing that any other kind of fish is killed by this "waste." The "waste," it would seem, is lighter than the water, and floats, or does not mix freely with it. My informant told me that the other fish took advantage of this, and sank to the bottom, or swam under the "waste;" for it was an exceedingly rare thing to find either roach, trout, or salmon killed by it. I examined

a great number of the dead fish, and found them to be all dace; I could not find a roach or perch amongst them.

PHOXINUS, Linn.

Yar., i. 372; *Couch*, iv. t. 199, f. 1. The Minnow.

In the Exe, the Teign, and most of our rivers with gravelly bottoms.

GENUS, **COBITIS, Linn.**

BARBATULA, Linn.

Yar., i. 376; *Couch*, iv. t. 199, f. 2. The Loach.

In stony places, such as the foot of weirs; in most of our rivers and streams.

Sub-Order II., ACANTHOPTERGII, *Linn.*
Fam., CYCLO-LABRIDÆ, *Bonaparte (partim).*
GENUS, **LABEUS, Linn.**

MACULATUS, Bloch.

Yar., i. 275; *Couch*, iii. t. 125, p. 24. Ballan Wrasse.

Taken occasionally on our rocky coast, Exmouth, &c.

MIXTUS, Fries.

Yar., i. 286; *Couch*, iii. t. 128, p. 361. Striped Wrasse.

Most of the specimens described by British authors have been taken in Devon and Cornwall. The great difference in colour, and in the age and sex, of the fish of this genus have led naturalists to name them as distinct species. For the correction of these, see Dr. Gunther's *British Museum Catalogue*, iv. p. 74.

GENUS, **CRENILABEUS, Cuvier.**

MELOPS, Linn.

Yar., i. 296; *Couch*, iii. t. 131, p. 43. Cork-wing.

Amongst rocks on the south coast, Exmouth, &c.

GENUS, **CTENOLABEUS, Cuvier.**

RUPESTRIS, Linn.

Yar., *British Fishes* (2nd edition), i. p. 333. Jago's Goldsinny.

Taken at Plymouth, Lieut. H. F. Spence.

GENUS, **CENTROLABEUS, Cuvier.**

EXOLETUS, Linn.

Yar., *British Fishes* (2nd edition), i. p. 341. Rock Cook.

Taken in Plymouth Sound, Lieut. H. F. Spence.

GENUS, **CORIS, Gunther.**

JULIS, Rondel.

Donovan, *British Fishes*, iv. pl. 96. Indented striped Wrasse.

Taken in Plymouth Sound, Dr. Leach. The specimen is in the British Museum.

Sub-Order II., THORACICI, *Linnaeus*.

Fam., GADIDÆ, *Bonaparte*.

GENUS, MORRHUA, *Belon*.

VULGARIS, *Cuvier*.

Yar., ii. 143; *Couch*, iii. t. 135, p. 53. Cod.

The common cod is not so abundant or so good as those from the north and north-east of our island; the flesh is not so solid. In Norfolk it is the commonest fish sold, and in Devon its place as an article of food for the poorer classes is taken by the hake.

GEGLEFINUS, *Cuvier*.

Yar., ii. 153; *Couch*, iii. t. 136, p. 62. Haddock.

South coast; frequent.

GENUS, GADUS, *Linnaeus*.

LUSCUS, *Cuvier*.

Yar., ii. 157; *Couch*, iii. t. 138, p. 70. Bib.

Very Common.

MINUTUS, *Linn*.

Yar., ii. 161; *Couch*, iii. t. 139. Power.

"Frequently taken with the hook, and in crab-pots;"
Montagu.

MERLANGUS, *Linn*.

Yar., ii. 166; *Couch*, iii. t. 140, p. 74. Whiting.

Very common.

POLLACHIUS, *Cuvier*.

Yar., ii. 172; *Couch*, iii. t. 142, p. 80. Whiting Pollack.

Common; taken with the whiting, and frequently sold as such.

VIRENS, *Linn*.

Yar., ii. 175; *Couch*, iii. t. 144, p. 87. Coalfish.

Equally abundant in all our bays, and sometimes even in the harbours.

GENUS, MERLUCCIUS, *Belon*.

VULGARIS, *Flem*.

Yar., ii. 177; *Couch*, iii. t. 148, p. 99. Hake.

This was the most common of all our fish, and was a great boon to the poorer classes. It used to be sold at about sixpence or eightpence for a good-sized fish,

weighing several pounds, but of late it has become much scarcer, and the same sized fish that were sold as above now fetch one-and-sixpence to two shillings each. It takes the place of the cod in the West, as the cod is on the northern and eastern coasts. Bellamy remarks (1839) that the hake was more abundant formerly than in his time; so that it would appear that this fish is gradually decreasing in numbers for some reason unknown.

GENUS, **MOLVA**, *Nileon*.

VULGARIS, *Flem.*

Yar., ii. 180; *Couch*, iii. t. 145, p. 89. Ling.

This fish does not appear to be so common on our coast as it is further west, in Cornwall.

GENUS, **MOTELLA**, *Cuvier*.

TRICERRATA, *Ble.*

Yar., ii. 186; *Couch*, iii. t. 149, p. 105. Three-bearded Rockling.

Taken in the Exe, and various places along the south coast.

There is a very fine specimen in the Albert Museum, Exeter; taken on the south coast.

MUSTELA, *Linn.*

Yar., ii. 190; *Couch*, iii. t. 150, f. 1, p. 108. Five-bearded Rockling.

Also taken in the Exe, but rare.

MACULATA, *Risso*.

Par., Wern. Mem. vii. p. 354; *Gunther*, Brit. Mus. Cat. iv. p. 366.

Three-bearded Rockling.

Taken off the coast of Devonshire, W. Cocks.

GENUS, **COUCHEA**, *Birch*.

GLAUCA, *Jenyns*.

Yar., ii. 192; *Couch*, iii. t. 151, figs. 1, 2. Mackerel Midge.

This curious little fish is taken occasionally on our southern coast.

ARGENTATA, *Montagu*.

In Mem. Wern. Society, ii. pt. 2, p. 249; *Couch*, iv. p. 427. Silvery Gade.

Found by Col. Montagu cast ashore on our south coast, 1808. Subsequently he took several specimens.

GENUS, **PHYCIS**, *Linn.*

FURCATUS, *Jenyns*.

Yar., ii. 201; *Couch*, iii. t. 153, p. 125. Great Forked Beard.

South coast, but rare.

Fam., PLEURONECTIDÆ, Bonelli.

GENUS, PLATESSA, Cuvier.

VULGARIS, *Fleming*.

Yar., ii. 209; *Couch*, iii. t. 169, p. 181. Plaice.

Very abundant, and good for food; but it depends greatly on the nature of the ground on which they are caught, whether it is muddy or sandy, as the fish partakes more or less of either. If from the latter, its flesh is firm and sweet, and *vice versa*.

FLESUS, *Fleming*.

Yar., ii. 215; *Couch*, iii. t. 175. Flounder.

This is equally common with the former. Mr. Bellamy says: "Has, through the effects of floods, obtained a residence in Slapton Ley, which is a fresh-water lake." It is also taken in the Exe, at Salmon-pool, and in the Axe where the water is brackish.

GENUS, HYPOGLOSSUS.

VULGARIS, *Fleming*.

Yar., ii. 230; *Couch*, iii. t. 169. Holbut.

Taken occasionally on our coasts, but are not sought after.

GENUS, HIPPOGLOSSOIDES, *Gottsche*.

LIMANDOIDES, *Bloch*.

Yar., ii. 224; *Couch*, t. 160, p. 153. Long rough Dab.

Rare; but is taken occasionally all round our coasts.

GENUS, PLEURONECTES, *Linn*.

LIMANDA, *Fleming*.

Yar., ii. 219; *Couch*, iii. t. 170, p. 185. Dab.

Very common. The best-flavoured are caught off Brixham. Those caught in the Exe, and other large estuaries where it is muddy, the flesh partakes of the nature of the ground.

CYNOGLOSSUS, *Linn*.

Couch, Fishes of the British Islands, iii. p. 190, t. 173. Craigfluke.

Taken at Brixham, Plymouth, &c.

LÆVIS, *Pennant*.

Brit. Zool. iii. t. 47, p. 309; *Yar.*, ii. 221; *Couch*, iii. t. 171, p. 187. Smear Dab, or Lemon Sole.

This is a very excellent fish, not so common as the "dab."

GENUS, RHOMBUS, *Cuvier*.

MAXIMUS, *Cuvier*.

Yar., ii. 233; *Couch*, iii. t. 161, p. 155. The Turbot.

This fine fish is not so frequent on our coast as in the

north, along the shores of Yorkshire, &c. A very handsome variety of this fish was shown me this morning (December 21st, 1874) by Mr. Sachell, fishmonger, St. Martin's Lane. The under side was white, as is usual, with the exception of a number of minute spots along the vertebral line. The upper side was also white, except the head, which was of the usual brown colour; and towards the posterior part the fish was beautifully maculated with rich brown. The edges of the spots were irregular and radiated, which much increased the beauty of the fish. The fins were also beautifully spotted, as was also the tail, with small rich brown spots. As compared with a fish of the same size, this was thicker, and the flesh firmer. This was particularly remarked by the fishmonger, who is in the habit of cutting fish of this kind.

VULGARIS, *Cuvier*.

Yar., ii. 240; *Couch*, iii. t. 162, p. 161. Brill.

Frequent along the southern coast.

PUNCTATUS, *Bloch*.

Turton's Linnæus; *Yar.*, ii. 243; *Couch*, iii. t. 165, p. 170. Müller's Topknot, also called French Sole; *J. J. Reading in litt.*

This is not at all a common species, indeed it might be considered rare. Mr. Ross mentions its being taken at Topsham; Col. Montagu obtained specimens, probably from Salcombe; and one taken in a crab-pot off Bovisand, August 23, 1865, and brought to Mr. Spence Bate while I was with him. Bloch does not say where his specimen was taken from which the drawing was made, but says: "Ce poisson habite les mers de la Chine et celles des Indes Orientales." As there appears to be considerable confusion with these two species, Bloch's and Müller's Topknots, may I suggest a reinvestigation of them to those who may have the opportunity for so doing? Since the above was written I have had an opportunity of examining a beautiful specimen. I have to-day (March 12th, 1873) examined a beautiful specimen of Bloch's topknot, in which I can confirm Bloch's figure and description. This specimen was so nearly like the figure that it might very well have been the one sketched by the artist; the markings were almost spot for spot. The figure given in Yarrell, vol. ii. p. 247, does not represent this species, the lateral line is quite different; but the one given for Müller's

topknot is much more like this of Bloch's, and I think Mr. Yarrell must have confounded the two species. The figure in Couch, vol. iii. p. 166, is much too narrow behind, and the colouring is not at all like the specimen I have examined. The lateral line is correct. The size of the specimen examined by me, and which was taken in Torbay, was—length, without the tail, $5\frac{1}{4}$ ins.; tail, 1 in.; width across centre of body, including fins, $4\frac{3}{8}$ ins.; across the body, not including fins, $3\frac{1}{8}$ in.; from the apex of the mouth, when closed, to the apex of the gill cover, $1\frac{1}{8}$ in.; gape of mouth, $\frac{1}{2}$ in. The teeth are very numerous, and rather strong in the lower jaw, not so strong in the upper. There are two raised white triangular lines, one on each side of the head, behind the eyes, which do not appear to have attracted the attention of the describers of this fish; but these lines are very conspicuous on the dark skin. The continuation of the fins under the tail, so as to form two little finlets, as figured by Couch, vol. iii. p. 171, for Müller's topknot, is well developed in this specimen. The whole upper surface is thickly covered with spinose scales. The scales do not overlap each other, but stand apart, and nearly erect, with an inclination towards the tail. On the average each scale has about eight or ten round white teeth. The scales are very firmly imbedded in the skin. The under side of the body is white, and nearly smooth.

MEGASTOMA, Yar.

ii. 251; Couch, t. 164, p. 167. Wiff, or Carter.

As Mr. Couch says, it is sometimes called the "lanthorn fish," it is so exceedingly thin, and consequently of little use as an article of food. It is not a common species on our coast.

GENUS, ARNOGLOSSUS, Günther.

LATERNA, Günther.

Yar., ii. 254; Couch, iii. t. 168, p. 177. Megrim, also called "Scald-fish."

This does not appear to be a common species, although, so far as is known, it is confined to the southern coast.

GENUS, SOLEA, Klein.

VULGARIS, Linn.

Yar., ii. 256; Couch, iii. t. 176, p. 200. Sole.

One of the most abundant and excellent fish of our seas.

AURANTIACA, *Gunther*.*Var.*, ii. 260; *Couch*, iii. t. 178, p. 205. Lemon Sole.

Taken occasionally with other soles by the trawlers, but it may be considered a scarce species.

VARIEGATA, *Donovan*.*Var.*, ii. 262; *Couch*, iii. t. 177. Variegated Sole, or Thickbacks, as they are known to our fishermen.

This is now almost as common as the true sole, and equally good for food.

MINUTA, *Pamel*.*Var.*, supp. ii. p. 36; *Couch*, t. 179. The Solenette.

Sometimes taken in large numbers in the trawl nets; but as they are of no use for the market, they are thrown again into the sea.

Order, ACANTHOPTERI, *Müller*.*Fam.*, PERCIDÆ, *Risso*.**GENUS, PERCA, *Linn*.****FLUVIATILIS, *Linn*.***Var.*, i. p. 1; *Couch*, i. t. 39, p. 185. Perch.

This is met with in most of our streams and railway ponds. It is taken in immense numbers in Slapton Ley; visitors go there for the purpose of catching these fish. It is one and almost the chief of the amusements of those visiting the neighbourhood and staying at the hotel. In some parts of the Exeter Canal they are also abundant, but do not grow so large as at Slapton Ley. It is not so abundant as in the eastern counties.

GENUS, SERRANUS, *Cuvier*.**CABRILLA, *Linn*.***Var.*, Brit. Fish. i. p. 11; *Gunther*, Brit. Mus. Cat. i. p. 106. Smooth Serranus.

Taken at Plymouth, Lieut. H. F. Spence.

GENUS, LABRAX, *Pallas*.**LUPUS, *Cuvier*.***Var.*, i. 6; *Couch*, i. t. 40, p. 189. Bass.

Taken on both north and south shores. This fish is in season from May to September.

GENUS, POLYPRION, *Cuvier*.**CERNIUM, *Valene*.***Var.*, Brit. Fish. i. p. 12. Stone Bass.

Taken at Plymouth.

GENUS, *TRACHINUS*, Linn.*LRACO*, Linn.

Yar., i. 20; *Couch*, ii. t. 73, p. 43. Great Weaver.

Taken all along the coast on rocky ground.

VIPERA, Cuvier.

Yar., i. 25; *Couch*, ii. t. 74, p. 48. Little Weaver.

This is also met with all along the coast.

GENUS, *MULLUS*, Linn.*SURMULETUS*, Linn.

Yar., i. 27; *Couch*, i. t. 47, p. 209. Surmullet.

Taken sometimes abundantly on the south coast, Brixham, &c.

BARBATUS, Linn.

Yar., Brit. Fish. i. p. 32; *Gunther*, Brit. Mus. Cat. i. p. 401. Plain Red Mullet.

Taken in Devonshire.

Fam., *SCLEROGENIDÆ*.GENUS, *TRIGLA*, Linn.*CUCULUS*, Linn.

Yar., i. 34; *Couch*, ii. t. 64, p. 19. Red Gurnard.

Common; sometimes taken in abundance.

HIRUNDO, Linn.

Yar., i. 41; *Couch*, ii. t. 65, p. 21. Tubfish.

This handsome fish is not so frequently seen in our markets as the former. It is taken more or less plentifully all along our southern coast.

OBSCURA, Linn.

Parnell, Fishes of the Firth of Forth, pt. 24, p. 23; *Gunther*, Brit. Mus. Cat. ii. p. 210.

Taken at Plymouth. From Mr. Yarrell's collection.

LYRA, Linn.

Yar., i. 44; *Couch*, ii. t. 66, p. 23. Piper.

Common. In season for the table, January, February, and again in August to December.

LINEATUS, Linn.

Yar., i. 46; *Couch*, ii. t. 67, p. 25. Streaked Gurnard.

This fish, although it has a wide geographical range, is not taken in any numbers; it appears shy and difficult to catch. Taken off Plymouth, J. J. Reading.

GURNARDUS, Linn.

Yar., i. 48; *Couch*, ii. t. 68, p. 27. Grey Gurnard.

The most abundant of the genus.

BLOCHII, *Yar.*

Yar., i. 50; *Couch*, ii. p. 29. Bloch's Gurnard.

Coast of Devon, Col. Montagu; in shore nets. There appears to be great difference of opinion about the fish figured by Bloch, pt. 2, pl. 59, to which Mr. Yarrell gave the above name. It does not appear to have been seen by any ichthyologist since Col. Montagu observed it, if he had the same fish in view as figured by Bloch. The great or rather distinguishing features are its dorsal fins, the first and second rays of which are nearly of the same length. Mr. Couch rather exaggerates when he says "the *Trigla cuculus* of Bloch is shown as having the first ray of the spinous dorsal fin conspicuously higher than the second." On reference to Bloch's plate in our edition (1785), the difference in the length of the first, as compared with the second, ray is only $\frac{1}{16}$ of an inch, and which Mr. Yarrell, in the 1836 edition of his *British Fishes*, as quoted above, has copied to a great nicety. I take the liberty here of drawing the attention of naturalists residing on the coast to clear up this fish. If it was taken in Col. Montagu's time—namely, fifty years ago—it surely cannot have been lost to our seas since then.

LUCERNA, *Linn.*

Yar., supp. i. 6; *Couch*, ii. t. 70, f. 1, p. 33. Long-finned Captain.

Taken by the Brixham fishermen off our south coast.

GENUS, PERISTEDION, *Lacépède*.

CATAPHRACTAS, *Linn.*

Yar., supp. i. 10; *Couch*, ii. t. 71. Mailed Gurnard.

First taken by Dr. Edward Moore in a trawl off the Eddystone. It appears to be very rare; only four examples have been taken.

GENUS, COTTUS, *Linn.*

GOBIO, *Linn.*

Yar., i. 56; *Couch*, t. 59, p. 6. Miller's Thumb.

In most of our rocky and pebbly streams, and near mill wheels.

SCORPIUS, *Linn.*

Yar., i. 63; *Couch*, ii. t. 60, p. 8. Father Lasher.

Very common all along our rocky coast.

BUBALIS, *Cuvier*.

Couch, *British Fishes*, ii. t. 61, p. 11. Lucky Prowch.

On the rocky parts of our coast; very common.

GENUS, *ASPIDOPHORUS*, *Lacépède*.CATAPHRACTUS, *Linn.*

Yar., i. 70; *Couch*, ii. t. 72, p. 41. Armed Bullhead.

South coast of Devon, Montagu; off Plymouth, J. J. Reading *in litt.*

GENUS, *GASTEROSTEUS*, *Goldfuss*.ACULEATUS, *Linn.*

Yar., i. 76; *Couch*, i. t. 37, f. 1. Three-spined Stickleback.

Common in most shallow streams, both in brackish and even in salt water; in brackish ditches, Topsham Marshes.

Var. *Gymnurus*, *Cuvier*.

Yar., i. 81. The Smooth-tailed Stickleback.

This is now considered only a variety, and not a species. The plates on the sides, which were thought to give specific characters, are found to vary, and are consequently not of specific value. It is found in several places round Exeter, Topsham, &c.

Var. *Trachurus*, *Cuvier*.

Taken in the Marsh, Plymouth; Museum, Dr. Leach.

SPINULOSUS, *Jenyns*.

Four-spined Stickleback.

This is another form, figured by Mr. Yarrell, vol. i. p. 82, which is now sunk as a species by some. It seems to have been met with at or near Teignmouth. Dr. Gunther regards this as a species in *Brit. Mus. Cat.*, i. p. 5. The Rev. L. Jenyns appears to have questioned the validity of the specific value of our sticklebacks, in opposition to Baron Cuvier. Mr. Couch has adopted Mr. Jenyn's views; yet in the face of this he says: "But if, for the sake of simplicity as well as truth, we can consider the British species of this family, that are marked by three or four free dorsal spines, as only varieties of one, we may with confidence affirm that no known kind of fishes are equally disposed to vary their forms or change their apparent character." This certainly argues very strongly in favour of specific distinction, if reliance can be placed on the number of dorsal spines (?).

PUNGITIUS, *Linn.*

Yar., i. 85; *Couch*, i. t. 37, f. 2, p. 176. Ten-spined Stickleback, or Tinker.

Taken occasionally on the south coast.

SPINACHIA, Linn.

Yar., i. 87; *Couch*, i. t. 38, p. 180. Fifteen-spined Stickleback.
South coast of Devon, off Plymouth, &c.

Fam., SCLÆNIDÆ, Bonaparte.

GENUS, SCLÆNA, Linn.

AQUILA, Cuvier et Valenc.

Yar., i. 90; *Couch*, ii. t. 76, p. 54. Maigre.

This is an exceedingly rare fish on our coast, and consequently cannot be called a native.

A fine specimen was taken at Teignmouth, Oct. 3rd, 1872.

It had on it some curious parasites, *Entopodella hippoglossi*.

GENUS, UMBRINA, Cuvier.

UMBRA, Gesner.

Yar., i. 95; *Couch*, ii. t. 76, p. 50. Bearded Umbrina.

This, like the above, is a rare visitor to our shores. The only known instance is recorded by Messrs. Yarrell and Couch, on the authority of J. Creswell, Esq., F.L.S., who communicated it to the Linnæan Society, 20th November, 1827. The specimen weighed a hundredweight.

Fam., SPARIDÆ, Bonaparte.

GENUS, { CHRISOPHEYS, Cuvier.
SPARUS, Bonaparte.

AURATA, Linn.

Yar., i. 97; *Couch*, i. t. 57, p. 243. Gilthead.

A rare fish in the British seas. Two or three specimens have been met with on the south coast.

PAGRUS, Linn.?

Couch, i. t. 51. Becker.

Mr. Couch says that there is so much confusion respecting this fish, both among Continental and British naturalists, that he would not increase the difficulties by giving any synonyms, but only give a faithful figure of the fish as known by the name of *Becker* on our coasts.

GENUS, PAGELLUS, Cuvier.

ERYTHRINUS, Cuvier.

Yar., i. 104; *Couch*, i. t. 53, p. 233. Red-sea-Bream. Walcott's MS.

First observed on our coast by Mr. Walcott, at Teignmouth; but it appears to be rare. Taken at Plymouth.

Var. (?) spec. Nov. (?)

Gunther, in Brit. Mus. Cat., i. p. 474.

This is probably a new species. Taken in South Devon.

OWENII, *Gunther*.

Cat. Brit. Mus., i. p. 478; *Couch*, i. t. 54. Spanish Bream.

Taken occasionally with the former, and with which it is very liable to be confounded.

CENTRODONTOS, *Cuvier*.

Yar., i. 107; *Couch*, i. t. 55, p. 237. Sea Bream.

Common all along the south coast, but more particularly off Plymouth.

GENUS, **CANTHARUS, *Cuvier*.**

LINEATUS, *Fleming*.

Yar., i. 114; *Couch*, i. t. 49, p. 222. Old Wife.

Common, but not abundant on the south coast.

Fam., **MUGILIDÆ, *Bonaparte*.**

GENUS, **MUGIL, *Linna*.**

CEPHALUS, *Willoughby*.

Yar., i. 200; *Couch*, iii. t. 122, p. 6. Grey Mullet.

Frequent on the south coast.

CHELO, *Jenyns*.

Yar., i. 207; *Couch*, iii. t. 123, p. 15. Thick-lipped Grey Mullet.

Taken occasionally on our coast. Common in the Exe;
F. L. Ross MS.

CAPITO, *Cuvier*.

Donovan, British Fishes, i. pl. 15; *Gunther*, Brit. Mus. Cat., iii. p. 439.
Mullet.

Taken on the coast of Devonshire, Dr. Leach. The specimen is in the British Museum. This fish is found also in the Nile, and fresh-water lakes of Tunis; also at the Cape of Good Hope.

GENUS, **ATHERINA, *Linna*.**

PRESBYTER, *Cuvier*.

Yar., i. 214; *Couch*, iii. t. 121, p. 1. Sand Smelt.

Taken off Exmouth; F. W. L. Ross MSS.

Fam., **SCOMBERIDÆ, *Yarrell*.**

GENUS, **THYMNUS, *Aristotle*.**

ALBICORA, *Cuvier*.

Pennant, Brit. Zool., iii. pl. 52, p. 266. Tunny.

The specimen mentioned by Pennant as captured at Inverary, 1769, and was weighed for his information, weighed 460 lbs.; it was 7 ft. 10 ins. long; its greatest circumference was 5 ft. 7 ins.; near the tail, 1 ft. 6 in.; tail, 2 ft. 7 ins. from tip to tip.

A fine specimen of this fish was taken off Dawlish during the easterly gales, September 11th, 1868, and reported in the *Field* and *Western Morning News* of Saturday, the

19th. It got entangled in the fishermen's nets. It measured 8 ft. 3½ ins. long; girth, 5 ft.; tail, 2 ft. 3 ins. across; and weighed 700 lbs. The fishermen state that it lives at the surface of the water; and according to Pennant, its food is herrings. A small specimen, weighing 80 lbs., was taken in August, 1829, in a fishing-net off Teignmouth.

THYNNUS, *Arist.*

Yar., British Fishes, i. p. 134 (edit. 1836); *Gunther*, Brit. Mus. Cat., xi. p. 362. Tunny.

A specimen, 45 inches long, taken at Plymouth, and presented to the British Museum by Lieut. H. F. Spence, R.N.

GENUS, *ORYZYNUS*, *Jensten.*

ALALONGA, *Cuvier.*

Couch, ii. t. 84, p. 100; *Gunther*, Brit. Mus. Cat., ii. p. 366. Germon.

Taken in the Exe, August 26th, 1865, and recorded in *Annals of Natural History* (3rd series), xvi. pp. 268-70, by Dr. Scott. This was a moderate-sized specimen. Length, from tip of nose to base of caudal fin, 24 ins.; girth round pectoral fin, 19 ins.; girth immediately in front of the second dorsal fin, 15½ ins.; weight, 12 lbs. The stomach was quite empty.

GENUS, *SCOMBER*, *Linn.*

SCOMBER, *Linn.*

Yar., i. 121; *Couch*, ii. t. 79, p. 67. Mackerel.

Abundant occasionally, but not so large as those taken on the eastern coast, off Yarmouth, &c.

GENUS, *XIPHIAS*, *Linn.*

GLADIUS, *Linn.*

Yar., i. 143; *Couch*, ii. t. 97, p. 145. Sword-fish.

Very rare in our seas. Mr. Reading informs me that a specimen had been taken off Plymouth.

GENUS, *NAUCRATES*, *Rafin.*

DUCTOR, *Linn.*

Yar., i. 149; *Couch*, ii. t. 87, p. 107. Pilot-fish.

Two were taken in Plymouth Sound, and one in Dartmouth harbour; but it must be regarded as a rare visitor.

GENUS, *TRACHURUS*, *Rafin.*

VULGARIS, *Fleming.*

Yar., i. 154; *Couch*, ii. t. 96, p. 136. Scad.

A regular visitor to our shores, but it is not thought much of as an article of food. It has a very wide geogra-

phical range, from the coasts of New Zealand, Australia, and the Mediterranean, to our own shores.

GENUS, ZEUS, *Linn.*

FABER, *Linn.*

Yar., i. 162; *Couch*, ii. t. 89, p. 118. John-Dorée.

Common on our south coast.

GENUS, CAPROS, *Lacépède.*

APER, *Linn.*

Yar., i. 169; *Couch*, ii. t. 96, p. 142. Boar-fish.

This is a rare species on our coast, although numbers have been taken on the west coast of Cornwall.

GENUS, LAMPRIS, *Cuvier.*

LUNA, *Linn.*

Couch, ii. t. 93, p. 133; *Donovan*, v. t. 97. Opah, or King-fish.

This very rare and beautiful fish was taken at Brixham, 1772. A specimen in the British Museum, 3 ft. long, from the coast of Devonshire. See Gunther, *Brit. Mus. Cat.*, ii. p. 416.

Fam., SQUAMIPENNES, *Cuvier.*

GENUS, KRANA, *Bloch.*

RAIL, *Willoughby.*

Yar., i. 117; *Couch*, ii. t. 92, p. 120. Ray's Bream.

This is an extremely rare visitor to our shores. Only one specimen is recorded as having been taken, so far as I can learn.

Fam., TÆNIOIDEI, *Richter.*

GENUS, CEPOLA, *Linn.*

RUBESCIENS, *Linn.*

Yar., i. 195; *Couch*, ii. t. 120, p. 262. The Red Band-fish.

This was added to the Devon fauna by Col. Montagu, who, in 1803, described two specimens taken in Salcombe bay. Since then several others have been taken on other parts of the coast. One was taken in the Exe, off Powderham; F. W. L. Ross MS.

GENUS, LEPIDOPUS, *Gouan.*

ARGYREUS, *Cuvier and Valene.*

Yar., i. 176; *Couch*, ii. t. 77, p. 59. Scabbard-fish.

We are also indebted to Colonel Montagu for making this known as a British fish. Two specimens were taken in Salcombe harbour.

GENUS, *TRICHIURUS*, Linn.*LEPTURUS*, Linn.*Couch*, ii. p. 61. Blade-fish, or Hair-tail.

A specimen 2 ft. 2 in. long was taken at Seaton, 1874.
There is a specimen in the Albert Museum, Exeter,
which formerly belonged to Mr. Rosa. This was cap-
tured off the Start Point, August 6th, 1852.

Fam., GOBIIDÆ, *Yarrell*.GENUS, *GOBIUS*, Linn.*NIGER*, Linn.*Yar.*, i. 251; *Couch*, ii. t. 98, p. 153. Rock or Black Goby.

Frequent along the rocky parts of our coast.

RUTHENOPARMI, *Cuvier*.*Yar.*, i. 255; *Couch*, ii. t. 100, f. 3, p. 162. Two-spotted Goby.

Common on some parts of our coast; in rock pools at Ex-
mouth, &c.

UNIPUNCTATUS, *Yarrell*.*Supp.*, i. 24; *Couch*, ii. t. 101, f. 3. One-spotted Goby.

Rare; taken off Exmouth; F. W. L. Ross MS.

AURATUS, *Risso*.*Couch*, t. 100, f. 1. Yellow Goby.

One specimen taken from the stomach of a cod caught
near Brixham, January, 1873; Mr. Gosden.

MINUTUS, Linn.*Yar.*, i. 258; *Couch*, ii. t. 100, f. 2, p. 161. Little Goby.

Common along the shore around Torbay.

GENUS, *ECHENÆIS*, Linn.*REMORA*, Linn.*Yar.*, ii. 280; *Couch*, ii. t. 88. Remora, or Sucking-fish.

Rare on our shores, Bellamy.

GENUS, *LEPIDOGASTER*, *Gouan*.*BIRNACULATUS*, *Turton's Linn*.*Yar.*, ii. 268; *Couch*, ii. t. 108, f. 1. Double-spotted Sucker.

This little species is found sparingly all round our coast.
Col. Montagu obtained it by dredging off Torcross; and
Mr. Gosse, near the Ore-stone, in fifteen fathoms.

{ *GOUANII*, *Bris*.{ *CORNUBIENSIS*, *Fleming*.*Yar.*, ii. 264; *Couch*, ii. t. 108, f. 2; *Mont. MS.*, t. 12, f. 2. Cornish Sucker.

This was also obtained by Col. Montagu amongst the rocks
at Milton, on the south coast. See Donovan, iv. pt. 76.

GENUS, *LIPARIS*, Linn.MONTAGUI, *Donovan*.

Yar., ii. 277; *Couch*, ii. t. 107. Montagu's Sucker.

On the rocky parts of our south coast; rather common.
Salcombe Bay, Dr. Leach.

GENUS, *CYCLOPTERUS*, Linn.LUMPUS, *Linn*.

Yar., ii. 270; *Couch*, ii. t. 105, p. 283. Lumpfish.

Taken off Exmouth occasionally, also on various parts of
the south coast. Plymouth, common, J. J. Reading.

Fam., *BLENNIIDÆ*, Rafn.GENUS, *BLENNIUS*, Linn.GATTORUGINE, *Fleming*.

Yar., i. 226; *Couch*, ii. t. 111, p. 219. Gattoruginous Blenny, or
Tompot, of the fishermen of the West of England.

It probably obtained this name from its having frequently
been taken in crab-pots. Not uncommon on the south
coast. There are specimens in the British Museum
from Torbay.

OCELLARIS, *Linn*.

Yar., i. 223; *Couch*, ii. t. 112. Butterfly-fish.

First taken on our south coast by Col. Montagu. A speci-
men was obtained at Plymouth by Lieut. Spence, R.N.;
but it must be considered a rare species. There are four
specimens in the British Museum from South Devon.

PHOLIS, *Linn*.

Yar., i. 230; *Couch*, ii. t. 113, f. 2. Shanny.

Common on rocky bottoms, in tide pools along the south
coast, but generally off Exmouth; small size. A curious
account of this fish is given by Mr. Ross, who kept one
alive in an aquarium for a long time. Mr. Ross says
that the blenny regularly indicated the rising and falling
of the tide; at the falling, it would leap out of the water
unto a stone placed on purpose above the water; and at
the time for the rising or flowing of the tide, it would
plump into the water off the stone. See Gosse, *A Year
at the Shore*, p. 215-16, for full account. Mr. Couch
does not believe in this popular statement, as he calls it,
but says, that although the fish will remain out of the
water for hours together, there is no regularity or stated
time for this at all corresponding with the rise and fall
of the tide. Mr. Ross related the peculiarities of this
little fish to me more than once at his own house, which

house, I may say, was always open to me as long as he lived.

GALERITA, Linn.

Yar., i. 219; *Couch*, ii. t. 113, f. 3; *Wern. Soc. Mem.*, i. t. 5, f. 2. Montagu's Blenny.

First made known as a British fish by Col. Montagu, who took it in rock pools left by the tide. See full particulars in *Wern. Soc. Mem.*

GENUS, **CENTRONOTUS, Bloch.**

GUNNELLUS, Linn.

Yar., i., 239; *Couch*, ii. t. 115. Butter-fish.

Taken in the Exe by R. Hall. It frequents oozy ground, but does not appear to be common.

GENUS, **ZOARCHUS, Swainson.**

VIVIPARUS, Linn.

Yar., i. 243; *Couch*, ii. t. 116. Viviparous Blenny.

This may be considered a rare fish with us, as only one specimen is known to have occurred on our coast.

GENUS, **ANARHICHAS, Linn.**

LUPUS, Linn.

Yar., i. 247; *Couch*, ii. t. 117. Wolf-fish.

Taken in Plymouth Sound, but it is very rare.

GENUS, **CALLIONYMUS, Linn.**

LYRA, Linn.

Yar., i. 261; *Couch*, ii. t. 103. Yellow Skulpin.

Taken off Plymouth, Mr. J. J. Reading *in litt.* "One was taken in the mouth of a hake off Exmouth."—F. W. L. Ross MSS. A very perfect specimen was brought me to-day (March 16th, 1874), taken from the stomach of a codfish caught off Brixham; it measured nine inches in length.—E. P.

DRACUNCULUS, Linn.

Couch, ii. t. 104, p. 178; *Yar.*, i. p. 302. Dusky Skulpin.

Captured amongst the young herrings, the so-called "white-bait," at Turf, the mouth of the Exeter Canal.

Fam., **LOPHIIDÆ, MacLeay.**

GENUS, **LOPHIUS, Linn.**

PISCATORIUS, Linn.

Yar., i. 269; *Couch*, ii. t. 110, p. 204. Sea-devil.

Occasionally taken on our south coast. A very large specimen, taken off Brixham, was exhibited by Mr. F. Gosden, fishmonger, Exeter, 1874.

Order VI., PLECTOGNATHI, *Cuvier*.
 Fam., GYMNODONTES, *Cuvier*.
 GENUS, ORTHAGORISCUS, *Bloch*.

MOLA, Linn.

Var., ii. 350; *Couch*, iv. t. 245, p. 377. Short Sunfish.

Taken at Plymouth, and several captured in the channel off the coast; J. J. Reading *in litt.* One two feet long was taken off Plymouth, Lieut. H. F. Spence. A fine specimen was captured on the 8th of August, 1871, off Seaton; it weighed about 3 cwt. The length from tip of snout to edge of caudal fin, 5 ft. 4 in.; width at the pectoral fin, 3 ft. 8 in.; from tip of dorsal fin to tip of ventral fin, 7 ft. 5 in. This specimen was stuffed, and is now in the Albert Memorial Museum, Exeter.

OBLONGUS, Schneider.

Var. ii. 354; *Couch*, iv. t. 246, p. 381; *Donovan*, ii. pl. 41. Oblong Sunfish.

This is a rare species on our shores. Dr. Borlase says: "One of large size was taken at Plymouth in 1734, that weighed 500 lbs."

Order, LOPHOBRANCHII, *Cuvier*.
 Fam., HIPPOCAMPIDÆ.
 GENUS, HIPPOCAMPUS, *Cuvier*.

ANTIQUORUM, Leach.

Var., ii. 342; *Couch*, iv. 241, p. 364. Sea Horse.

I have heard of one only as having been taken on our coast.

Fam., SYNGNATHIDÆ, *Bonaparte*.
 GENUS, XEROPHIS (*Rafinesque*), *Kaup*.

ÆQUOREUS, Linn.

Var., ii. 335; *Couch*, iv. t. 240, p. 356. Ocean Pipe Fish.

This curious fish was added to our fauna by the indefatigable Col. Montagu. I met with a specimen of this, about a foot long, cast ashore on Dawlish beach, Sept. 17th, 1872; it had probably been captured in the fishermen's nets, as many other fish which had been more or less injured in the nets were cast ashore by the tide.

LUMBRICIFORMIS, Willoughby.

Var., ii. 340; *Couch*, iv. t. 241. Middle Figure, or Worm Pipefish.

Taken off Plymouth, Mr. J. J. Reading *in litt.*; and Mr. Gosse, *A Year at the Shore*, t. 23.

GENUS, SYGNATHUS, *Linn.*

ACUS, Linn.

Var., ii. 325; *Couch*, iv. t. 239, f. 1. Greater Pipefish.

A specimen was captured at Teignmouth by W. Walcott, Esq., and Mr. Reading mentions it as having been captured at Plymouth.

Order, GANOIDEI, *Bonaparte*.
Fam., STURIONIDÆ, *Swainson*.
Genus, ACIPENSER, *Linn*.

STURIO, *Linn*.

Fer., ii. 360; *Couch*, i. t. 35, p. 157. Common Sturgeon.

Occasionally taken on our coast, and in the larger rivers.

A fine specimen was taken in the Salmon Pool, near Exeter, a few years since; its length, from the nose to the tip of the tail, was 7 ft. 6 in. Mr. Ross obtained the heads of several specimens that had been captured in the Exe, two of which are the broad-nosed varieties. These differ somewhat in the arrangement of the plates of the head, and were at the time considered of sufficient importance to establish them as distinct species; but, according to Mr. Couch, the broad-nosed are only varieties of the common form, as the head-plates are found to vary in different individuals of apparently the same variety; besides, intermediate varieties have been found to connect the broad-nosed with the narrow, at once breaking down the distinction between them. A fine specimen was captured off Exmouth, June 25th, 1873, in the fishermen's nets, and I saw it next morning hung up at the fishmonger's stall in St. Martin's Street, Exeter, and took notes of it. This fish, which was very fleshy and full, measured 7 ft. from tip of nose to tip of tail; from base of tail to tip, 1 ft.; head to base of gills, 1 ft.; from nose to eyes, $7\frac{1}{2}$ ins.; distance between the eyes, 6 ins.; breadth across the nose at broadest part, 4 ins.; nose very obtuse; from nostrils to tip of nose, $4\frac{1}{2}$ ins.; extremity of last scute on base of head to tip of nose, 1 ft. 6 ins.; number of dorsal scutes, 11; none beyond the dorsal fin; beyond, there were 4 depressions; lateral line of scutes, 26; abdominal, 10 in each line; scutes not much elevated above body; colour, olive-brown, with a bluish cast, on back and sides; belly whitish, with a bluish hue; skin above rough with a number of small osseous plates and minute spines. This was a female fish, and full of spawn; the ovarium and ovaries were bluish-black. The ovaries were attached to the ovarium in a peculiar manner, springing from it, as it were, like buds, and varying much in size, from small shot to the size of small peas—the largest containing a

milky fluid, the whole mass weighing about 18 lbs. or 20 lbs. Mr. Yarrell says: "The sturgeon, as has been before observed, is oviparous, spawning in winter." The fish under consideration would hardly have carried her spawn so long, I should think, it being only now the 25th of June.

Order, *PLAGIOSTOMI*, Dumeril.

Fam., *SPINACIDÆ*, Cuvier (?)

GENUS, *SPINAX*, Cuvier.

ACANTHIUS, Linn.

Yar., ii. 400; Couch, i. t. 11, p. 49. Piked Dog-fish.

Very common on our southern coast.

Fam., *SCYLLIIDÆ*, Aust.

GENUS, *SCYLLIUM*, Cuvier.

CANICULA, Linn.

Yar., ii. 367; Couch, i. t. 2 p. 14. Small-spotted Dog-fish.

Taken off our south coast; indeed it is much too plentiful for the fishermen.

{ *STELLARE*, Bellon.

{ *MAJOR*, Willoughby and Ray.

Yar., ii. 373; Couch, i. t. 1, p. 11. Nurse-hound, or Large-spotted Dog-fish.

Taken off Plymouth; Mr. Reading in litt.

Fam., *NICTITANTES*, ———(?)

GENUS, *GALEUS*, Klein.

VULGARIS, Fleming.

Yar., ii. 390; Couch, i. t. 9, p. 45. Common Tope.

This rapacious species is common along the south coast.

GENUS, *MUSTELUS*, Bellon.

LEVIS, Cuvier.

Yar., ii. 393; Couch, i. t. 10, p. 47. Smooth Hound.

Frequent along the south coast. It is known in Plymouth and Cornwall as the "ray-mouthed dog-fish."

Fam., *LAMNIDÆ*, Muller (?)

GENUS, *LAMNA*, Cuvier.

CORNUBICA, Turton's *Linnæus*.

Yar., ii. 384; Couch, i. t. 8, p. 41. Porbeagle.

Rare. Taken on the south coast; Mr. Reading in litt. Two or three specimens taken on the north coast, at Clovelly, 1871. "On April 27th, 1836," Mr. Bellamy says, "a specimen was taken which measured eight feet in length, and contained five young ones."

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Fam., ALOPECIIDÆ, Müller (P)
GENUS, CARCHARIAS, Cuvier.

GLAUCUS, Linn.

Yar., ii. 381; Couch, i. t. 6, p. 28. Blue Shark.

Mr. Reading informs me that a specimen was taken off Plymouth; and Mr. Yarrell says: "More frequently on the Devonshire and Cornish coasts than on any other part of the British Islands." A small specimen was taken off Start Point, July 4th, and sent to Mr. Gosden, fishmonger, Exeter, a cast of which was made for the Albert Museum, Exeter. A half-grown specimen, as mentioned by Bellamy, was taken in June, 1839, at Plymouth.

GENUS, ALOPECIAS, Müller and Henle.

VULPES, Cuvier.

Yar., ii. 379; Couch, i. t. 7, p. 37. Fox Shark, or Thrasher.

Taken occasionally on our south coast.

Fam., SCYMNIIDÆ, Müller.
GENUS, SYMNUS, Cuvier.

SPINOSUS, Turton's *Linnæus*.

Yar., supp., ii. 546; Couch, i. t. 12, p. 54. Spinous Shark.

Three specimens of this almost world-wide-distributed fish have been taken on our shores. Two of these are mentioned by Mr. Yarrell as having been taken in trawl-nets off Brixham, and the other was hooked off Berry Head. The third I saw at Mr. Gosden's, fishmonger, High Street, Exeter; this was captured off Brixham, March, 1872. The form of this specimen was very much like the one figured by Mr. Yarrell at p. 54, long and thin. Length, 5 ft. 3 ins., from apex of snout to tip of fleshy part of tail; breadth of head from eye to eye, 7 ins.; width of tail, 1 ft. 2 ins.; from tip of nose to anterior base of pectoral fin, 14½ ins.; from apex of nose to anterior arch of mouth, 5½ ins.; transverse diameter of mouth, 6 ins.

GENUS, SELACHUS, Cuvier.

MAXIMUS, Linn.

Yar., ii. 396; Couch, i. t. 14, p. 60. Basking Shark.

Rare in our seas, but has occasionally been taken off the south coast.

Fam., SQATINÆ, Swainson.
GENUS, RHINA, Klein.

SQATINA, Bellon.

Yar., ii. 407; Couch, i. t. 17, p. 73. Monk-fish.

Common at times all along the south coast. A fine specimen was taken off the south coast, March, 1869, and was brought to Exeter for exhibition by its captors.

Fam., TORPEDINIDÆ, Müller.
GENUS, TORPEDO, Dumeril.

HEBETANS, Lowe.

Yar., ii. 410; Couch, i. t. 30, p. 119; Donovan, iii. pl. 53. The Electric Ray.

It appears first to have been taken on our shores by Col. Montagu, at Torcross; but it is rare. Several are mentioned as having been taken by fishermen in Torbay; and one obtained at Brixham weighed 53 lbs. avoirdupoise weight, and measured 4 ft. in length, 2½ ft. in breadth, and 4½ ins. in thickness; Mr. Walsh, in Donovan's *British Fishes*.

An adult skin from Plymouth presented by Lieut. H. F. Spence to the British Museum.

Fam., RAIIDÆ, Bonaparte.
GENUS, RAIE, Linn.

BATES, Linn.

Yar., ii. 421; Couch, i. 18, p. 87. The Skate.

Very common, although not so much so as on the eastern coast of England, where they appear to be more appreciated as an article of food.

ACUS, Risso.

Yar., ii. 424; Couch, i. t. 21, p. 97. Burton Skate.

Taken occasionally off Plymouth, sometimes of very large size.

MARGINATA, Lacepède.

Couch, *British Fishes*, i. t. 26, p. 110.

This very distinct and fine species was taken at Plymouth by Lieut. H. F. Spence. It is said to be rather plentiful in the Portland Roads, on a sandy bottom.

MICROCELLATA, Montagu.

Yar., ii. 433; Couch, i. t. 25, p. 107. Painted Ray.

A very local species. It appears to be confined entirely to the coasts of Devon and Cornwall.

ASPERA, Willoughby.

Yar., ii. 414; Couch, i. t. 29, p. 117. Shagreen Ray.

This appears to be a scarce species on our coast, but it is not at all rare in the north of England.

CIRCULARIS, Couch.

British Fishes, i. pl. 27, p. 112. (*Mirabilis*.) Sandy Ray.

Taken at Plymouth by Lieut. F. Spence. Dr. Gunther, in *Brit. Mus. Cat.*, viii. p. 462, considers *circularis* and *mirabilis* the same fish.

CLAVATA, *Willoughby*.

Var., ii. 436; *Couch*, i. t. 22, p. 99. Thorn-back Ray.

A very common and valuable fish, used as an article of food.

Fam., TRYGONIDÆ, *Swainson*.

GENUS, TRYGON, *Adanson*.

PASTINACA, *Linn*.

Var., ii. 442; *Couch*, i. t. 31, p. 130; *Bloch*, iii. t. 82. The Sting Ray.

Taken on the south coast, off Plymouth; J. J. Reading in *litt*.

GENUS, PTEROPLATEA, *Müller and Henle*.

ALTAVELA, *Linn*.

Dr. Gunther, *Brit. Mus. Cat.*, viii. p. 486, says: "Body at least twice as broad as long; tail very short and thin, with or without a rudimentary fin, and with a serrated spine; pectorals united in front; nasal valves coalescent into a quadrangular flap; no papillæ at the bottom of the mouth; teeth small, uni- or tri-cuspidal." He lays no stress on the double spines.

Mr. Couch, in *Brit. Ass. Report*, 1869, says: "Of the fish there have been but few novelties that I can add to the previous lists. The most interesting specimens are those of the double-spined ray." In *British Fishes*, i. p. 133, Mr. Couch also says: "Mr. Dillwyn, *Fauna of Swansea*, mentions an instance of the occurrence of two spines in a 'sting ray' caught near Swansea, and supposed it therefore to constitute the *R. altavela* of Linnæus." This double-spined specimen is placed in the Museum at Plymouth. It was captured off Plymouth. Mr. Couch, in a note on this specimen, seems to regard it as a variety of *M. aquila*. If Mr. Couch had referred to Donovan, *British Fishes*, v. pl. 99, he would have seen a specimen of *R. pastinacea* figured with two spines; and the explanation of it is this, as Donovan puts it: "As the sting ray sheds its spine annually, and the new spine appears before the old one drops off, we have suspected that the *altavela* may be only the common kind at that precise period when both spines appear."

Fam., MYLOBATIDÆ, *Müller*.

GENUS, MYLOBATIS, *Agassiz*.

AQUILA, *Linn*.

Var., i. 446; *Couch*, ii. t. 32, p. 135; *Bloch*, pt. 3, t. 81. The Eagle Ray.

Mr. Reading tells me that there are two specimens of this rare fish in the Museum at Plymouth, one of which had

been there a long time. The other specimen he added by purchase of Mr. Charles Stewart, who bought it of a fisherman on Plymouth Quay. A specimen measuring across the fins 2 ft. 3½ ins.; length, from snout to base of spines, 1 ft. 7½ ins.; total length, from snout to extremity of tail, 3 ft. 6½ in., was taken in Torbay, November 1st, 1871, and was exhibited by Mr. Gosden, dealer, High Street, Exeter. It is now in the Albert Museum, Exeter.

ALLUVIAL DEPOSITS ON PLYMOUTH HOE.

BY R. N. WORTH, F.G.S.

(Read at Torrington, July, 1875.)

FROM time to time traces of alluvial deposits discovered on the Hoe, at Plymouth, have occasioned considerable controversy, especially as they are in some measure associated with the remains of what are commonly held to be raised beaches. Within the past few months fresh discoveries have been made, and it has been suggested that the whole of the phenomena indicated, alluvial deposits and raised beaches together, are really part of the northern drift. I purpose giving my reasons for holding a contrary opinion.

The Hoe is part of a ridge of Devonian limestone, which, in the words of the late Mr. J. Prideaux, "though intersected in several places," extends "from Mount Wise to Oreston quarries, almost as level as the top of a wall."* The highest point of the Hoe, which has a plateau of some width, is 110 feet above mean tide level, and the average height of the plateau is about 100. Midway on the Hoe extensive excavations are now in progress for the foundations of an hotel, in course of construction by Mr. Pethick, and these have revealed the existence of the deposits which I desire to describe.

Below the ordinary turfy soil there is a bed of earth more or less clayey in character, through which are scattered numerous pebbles. This varies in depth up to four or five feet, and contains patches of white and red clay appearing to graduate, partially at least, into the less distinctively clayey soil by which they are surrounded. With the clay are small veins of sand tending downwards to larger arenaceous deposits, which have not yet been bottomed. Where the rock has been reached, except on the seaward or southern side of the excavation, it is the ordinary limestone. On the south the

* *Trans. Plym. Inst.*, vol. i. p. 40.

rock is what is locally called "hardhead," an arenaceous limestone of a reddish hue, which appears to rest unconformably on the common limestone, here dipping southward at a high angle.

I take the different constituents of the deposits here described in order.

The matrix of the pebbles, which I have termed clayey in character, differs in no respect from the ordinary alluvium of an ordinary river valley; unless in the occurrence of the patches of clay.

The pebbles scattered through it range from a very small size up to boulders a dozen pounds or more in weight. They are chiefly quartzose, some apparently a mixture of quartz and schorl, others granitoid in character, though rather resembling an elvan than a true granite; with a few of a dark hard slate. There are likewise fragments of limestone more or less water-worn; but the pebbles are unquestionably travelled.

The clay occurs in patches rather than beds, these occasionally assuming a lenticular shape. The white clay in exterior character exactly resembles the ordinary clays of the Bovey Heathfield, and at once suggests a similar origin in the decomposed felspar of the Dartmoor granite. This clay contains very few pebbles. The red clay, as a rule, is not so free from them. It may have been derived from the decomposition of a granite with a reddish felspar; but the probability is that it owes its colour to the direct action of iron. Fragments of iron ore have been found in association. The white and red clays occur in close juxtaposition on the same level; and probably therefore the origin of both is the same, and the difference in colour is due rather to local causes of an accidental character.

The sand is the chief peculiarity of the series of deposits. It varies in colour from white, to drab, cream-colour, and red; is very fine and unmistakeably siliceous—precisely such a sand as would be produced by the degradation of a quartzite rock—such a rock, in short, as that from which the quartz pebbles already spoken of came. In mass it occupies a position distinctly subordinate to the clays, and evidently fills a large fissure in the rock, as yet of unknown depth.

These deposits are by no means isolated phenomena in connection with the Hoe.* Sand was found by Mr. Pethick in digging the foundations of Elliot Terrace, adjoining; but that was largely mixed with pebbles.

* At our first meeting Mr. C. Spence Bate, F.R.S., described deposits of sand at Bovisand, which have unquestionably a like origin.

In 1808 a deposit of sand was found on the Western Hoe, fifty feet above high water mark, which contained the jaw of an animal with teeth two inches long, and a large vertebræ $9\frac{1}{2}$ inches by $4\frac{1}{2}$, doubtless that of a whale.

Mr. Bellamy, in his *Natural History of South Devon*, published in 1839, states* that the height of the ancient beach on the Hoe was generally about 30 feet above high-water mark; and describes a patch as it then existed, 20 feet in depth, and fifty feet above high-water. It rested on a shelf of smoothened rock which sloped gently seawards, and consisted of regularly "superposed or stratified" layers, varying from extremely fine sand to moderately sized pebbles. As traces of pholades were discovered in the rock on which these deposits rested, there can, I think, be no doubt that they were what they were taken to be, a raised beach.

These beaches are from fifty to seventy feet lower than the clays and sand which I have been describing; and the interval is, or has been, more or less filled up by the occurrence of deposits somewhat similar, in which we have the authority of Dr. Moore for saying that bones were found representing, with tolerable closeness, the fauna of the Oreston caves, including remains of the elephant, rhinoceros, and bear.† These may have been taken from portions of deposits which filled fissures in the limestone, under conditions very nearly analogous therefore to that of the cavern at Oreston.

And now for my reasons for distinguishing between what I have called the alluvial deposits and the raised beaches; and my disbelief in their drift origin.

I hold it to be capable of demonstration that the peculiar wall-like character of the great ridge of Plymouth limestone is due to the action of water—that the ridge is, in short, a platform of denudation, formed by a great river which probably followed in the main the course of the present Tamar, but whose debouchure must have been some distance further seaward. That being admitted, the whole of the phenomena described are to be accounted for by a gradual elevation of the land, such as we know to have taken place in geologically recent times. The range of limestone must have been exposed to the denuding action of the waters for a period of great duration, ere the platform could have been levelled as we now find it. While this process was onward, either no deposits were thrown down, or they were only harboured in sheltered

* Page 115.

† Vide report of Geological Section, Plymouth meeting of British Association, 1841.

spots. I am inclined to think that the deposition did not commence until the crest of the Hoe had been raised nearly to the level of the waters. Such fine sand could not have been deposited by either a rapid or a deep stream, at any rate at the actual site of deposition; and so with the clay. We see deposits of precisely analogous character formed in the present day by the streams which flow from china clay works. In the ordinary alluvium and the pebbles intermixed, we have evidently the work of a still later period, when the Hoe had begun to peer above the waters, and was only liable to occasional overflow, the river meanwhile busily eroding the present channels by which it passes the rocky barrier, possibly in the track of some pre-existing fractures and fissures. The raised beaches are probably more recent, and may, to a certain extent, be taken to mark pauses in the upheaval, which pauses must have been of long duration to permit of the formation of the shelves of rock upon which these beaches rested.

I trace, therefore, the whole of the phenomena of which I have been treating to a single cause, or rather, perhaps, chain of similar causes: upheaval in conjunction with the action of water, at first fluvial only, but subsequently both fluvial and marine, since concurrently with the upheaval the volume of water in the river would appear to have gradually diminished, and tidal action to have assumed greater power.

NOTES ON BOULDERS AND SCRATCHED STONES IN SOUTH DEVON.

BY W. PENGELLY, F.R.S., F.G.S., ETC.

(Read at Torrington, July, 1875.)

I. THE NEW RED SANDSTONE BOULDERS OF WADDETON.

EARLY in 1875, my attention was directed by Mr. Appleton, F.I.B.A., of Torquay, to a series of boulders of New Red Sandstone on the property of Mr. Studdy of Waddeton Court, on the left bank of the river Dart, from 3 to 4 miles north of Dartmouth. On the 10th May I visited Waddeton, accompanied by Mr. J. E. Lee, F.G.S., &c., for the purpose of examining them, when Mr. Studdy was so good as to be our guide, and give us all the information in his power respecting them. The first specimens we saw were three subangular masses, embedded in the soil and projecting above the greensward, between the Dart and Waddeton Court, and within sight of the latter. So far as it is visible, the largest measures 6 feet in length and 3 in greatest breadth, and the others are not much smaller. They occupy the angular points of an isosceles triangle, of which the base, having the direction N. 78° W. to S. 78° E., magnetic, is 30 paces long, whilst the sides are about 50 paces each, and the vertex is in the direction of the house. We were shown, in an orchard, numerous pits whence boulders have been dug from time to time, and one specimen *in situ*, measuring 3 feet long and 2 broad. Mr. Studdy took us to a farm house, near his own residence, in the front garden of which was an undisturbed boulder, but which had one end recently broken off. That portion of it which was visible was considerably rounded, and measured 9 feet in mean diameter. We dug away a portion of the soil in which it was lodged and ascertained that its base was also well rounded, and that it lodged on undisturbed Devonian Slate. This specimen has certainly the appearance of a transported block. Adjacent to the same

farm house, but not in the garden, we were shown the site of a boulder, which had been broken up and removed by Mr. Studdy, and, from his description, must have been fully 10 feet in mean diameter. There were in the farm yard numerous portions of boulders which had been broken up. On the surface of a boulder projecting from the base of a hedge, there were several parallel grooves, crossed by a second set also parallel to one another. This was the only fact we noticed suggestive of glacial scratches, but it was not sufficiently pronounced to justify the opinion that the lines were due to such an agency. Our attention was directed to an old well in one corner of a field, in which a woman drowned her child a few years ago. The well is now filled with rubbish, and covered with a red sandstone boulder found near at hand.

These boulders consist of very hard, more or less micaceous, red sandstone. All that have been found were embedded in the soil, and when dislodged all those portions of their surfaces which had been protected from the air were very soft and friable, but soon hardened on exposure. So far as has been noted they all occupy areas having a Slate subsoil, none of them having been met with where there is limestone beneath.

Their heights above mean tide are estimated by Mr. Studdy to be generally from about 70 to nearly 200 feet; but in a letter dated 22nd June, he speaks of having recently found a large specimen in his meadow not more than from 15 to 20 feet above low water; and he adds that he does not believe that it has ever been disturbed by man.

The boulders, being in much request by architects on account of the hardness and durability of the stone, are sent off to Dartmouth and elsewhere throughout a considerable district. Indeed, my acquaintance with them is due to the fact that Mr. Appleton employed them in the restoration of Tor Abbey house, on which he has been recently engaged. Their qualities seem to have been long and well established, as a precisely similar sandstone was largely employed, especially for arches, in the churches and other important buildings of the district. I recently noted it in the church of Harberton, about 2·5 miles south-west from Totnes.

Besides the sandstone boulders, we detected two of dolomitized limestone; one of them, between the Dart and Wadeton Court, was rudely globular and about 2·5 feet in mean diameter; the other was in a field adjacent to that in which we saw the old well.

The following questions present themselves respecting the

red boulders just described :—1st, Are they travelled masses ? 2nd, If so, whence did they come ? 3rd, When were they lodged where they now lie ? 4th, What was the agent of transportation ?

1. The New Red Sandstone System, as a continuous formation, reaches its southern termination in the fine cliff forming the northern boundary of Goodrington Sands, Torbay, about two miles, in a straight line, north-east from Waddeton, but several "outliers" exist to the south and west of that point, and some of them far removed from it; namely, between Goodrington Sands and Saltern Cove, between Saltern Cove and Broad Sands, two very small masses near the top of the cliff between Berry Head and Mudstone Bay, at the village of Slapton on the shore of Start Bay, at Thurlestone in Bigbury Bay, and near Cawsand in Plymouth Sound.* If these numerous outliers on all sides of Waddeton be taken as evidence of the denudation of a great volume of New Red Rocks in the South and West of Devon—and on this there will probably be little or no hesitation—it must be admitted to be possible that the blocks under notice may be, not travelled masses, but remnants *in situ* of New Red beds which once covered the older formations now exclusively occupying the district. It is, no doubt, true that the form they now bear is not inconsistent with transportation, and it is equally true that the waves which possibly did the work of denudation, but may have left them *in situ*, would have reduced them to the shape they now have.

2. So far as I am aware, neither in the New Red Sandstone cliffs forming almost the entire coast of South-eastern Devon from Torbay to the confines of Dorsetshire, nor in any of the outliers already mentioned, with the exception of the two small masses near Berry Head, is there any Sandstone having a hardness at all approaching that of the Waddeton boulders. The blocks therefore, if they *have* travelled, and if their parent beds *must* be pointed out, certainly connect themselves with the Berry Head outliers, upwards of four miles off as the crow flies, to the exclusion of all other sources with which I am acquainted, unless, indeed, they are fragments of certain well-known dykes to be briefly described immediately. It may be as well to state, however, that boulders similar to those at Waddeton are by no means rare on the Berry Head plateau, and that a large subangular mass of the same

* See *Trans. Devon. Assoc.* vol. i. 1866, pp. 49–59.

material lies at the base of the Raised beach between Berry Head and Berry-Head house.

The Devonian limestone, forming the southern shore of Torbay, is traversed by almost vertical dykes of New Red Sandstone, which form two sets or systems, one having a direction which may be conveniently termed East and West, whilst the others run from North to South.* The East-and-west system is well-exposed at intervals from Berry Head to the railway cutting at the southern end of the viaduct crossing Broad Sands, about 1·5 mile east of Waddeton. This body of limestone extends to Waddeton where it terminates. It is extensively quarried at Galmpton Creek on the left bank of the Dart, but, after a recent and careful examination, I feel justified in saying that there are no traces there of such Red Sandstone dykes as have been already described, and this is confirmed by the quarrymen, who appear to be well acquainted with those in the Berry Head quarries. Observing on my return from the quarries, that lumps of sandstone having all the characters of the Waddeton boulders, some of them, indeed, being more or less rounded, had been used, though much less frequently than other stones, in building the common walls in the village of Galmpton, I learnt from a labouring man, to whom I spoke on the subject, that they had been obtained from the site of the Churston Station, on the Torbay and Dartmouth Railway, where they had been dug out of the soil in vast numbers during the excavation preparatory to building the station. I subsequently saw a large one at the base of an old hedge, and, without doubting the accuracy of my informant, am of opinion that the boulders had been recognized and utilized in the district before the introduction of Railways. On reaching the station I found one large boulder on the west side of the railway, and a small one at one end of the doorstep of the hotel. I am unprepared to state whether such dykes traverse the limestone between Torbay and Waddeton, north of the quarries at Galmpton Creek; and can only add that I have no recollection of having seen dykes of the kind passing through the Devonian slate anywhere.

3. The fact that the boulders at the Churston Station, on the table land known as Galmpton Common, were completely buried in the soil, may be taken as evidence that a considerable time has elapsed since they were lodged there; and this

* See *Trans. Devon. Assoc.*, vol. i. part 2, 1863, pp. 40-43, and part 5, 1866, p. 52; also the *Geol. Mag.*, vol. iii. p. 19.

is borne out by the more or less corresponding condition of most of those at Waddeton. Nevertheless, if man has neither disturbed the specimen mentioned by Mr. Studdy as occupying the very low position in his meadow, nor those at higher levels inspected by Mr. Lee and myself, the general contour of the district can have undergone very little change since they were deposited where they now are, and the date of that event cannot be very remote geologically.

4. Assuming the boulder formerly adjacent to the farm house, and broken up by Mr. Studdy, to have been 10 feet in mean diameter, that its form was spherical or nearly so, and that its specific gravity was 2.5, or not above that of common stone, it must have measured upwards of 500 cubic feet and weighed fully 36 tons. It is, no doubt, possible for such waves as occasionally break on the British Coast to move a mass having this volume and weight, but it may be safely concluded that they could never have transported it across a submarine valley having a depth at all approaching that of the valleys which now separate Waddeton from any area at present occupied by the New Red Sandstone formation. The very soft and friable character of their surfaces, when first dug out of the soil, renders it eminently improbable that if they had ever borne glacier scratches they could have retained them, and forbids the attempt to come to any conclusions from the mere absence of such marks.

As the facts now stand, I incline to the opinion that the boulders have reached Waddeton from some part of the district lying between Berry Head and Galmpton Common, and that they were transported by ice in some form. The evidence, however, is so wretchedly meagre, that had it not been for the different levels at which they are found, the present configuration of the surface of the district, and the great weight of some of them, I should have declined to express even this mere *leaning*; and it is done now in the hope that it may induce some one to seek, and the earnest desire that he may find, some additional evidence which shall either refute or establish the view just faintly indicated.

II. THE SCRATCHED STONES OF ENGLEBOURNE.

In April, 1875, Mr. P. F. S. Amery of Ashburton, was so good as to inform me that on the property of Mr. Paige-Brown of Great Englebourne, in the parish of Harberton,

about 3 miles south-west from Totnes, and on the right of the road from that town to Kingsbridge, there were masses of rock having grooves or marks on them suggestive of glacial action. On 16th June, Mr. Paige-Brown, having occasion to write to me, introduced the subject in the following words:—"Some time since I observed on some large stones from 2 to 4 feet long, marks which I thought much like the striation which I have seen in Plates—for I have never had an opportunity of seeing marks of striation on actual rocks. These stones are very hard Trap, not apparently rolled, but with the edges rounded, and the faces smoothed, as if by friction. I could only conjecture that these were marks of glacier action." As Mr. Paige-Brown was so good as to invite me to do so, I had the pleasure of visiting him and inspecting the specimens on 25th June, when he kindly took me to all with which he was acquainted, after having shown me a scratched hand specimen he had at his residence. The stones I saw *in situ* were 8 in number, all in that part of Mr. Paige-Brown's property known as "Wise's Englebourne." The first was in "The Meadow," and all the others in a field called "Great Zackland." Indeed, this field has recently been enlarged by the removal of a hedge for the purpose of adding another field to it; and this hedge of earth and plants had been made on some of the stones; a fact to which their preservation is probably due. They are all of fine-grained trap, of close texture, and extremely tough; one of them, which has been broken, displays a schistose fracture, and may be a trap ash. Their heights above mean tide do not differ very much: Mr. Paige-Brown's estimate is about 100 feet. The lowest specimen is about 6 feet above the bottom of the valley. I made the following notes respecting the specimens on the spot:—

No. 1, near the lower gateway of "The Meadow," measures 2·5 feet in length, 1·5 in greatest breadth, and at least 1 foot in depth. No attempt was made to ascertain to what depth it penetrated the soil. It is angular, the upper surface smooth, with the edges and ridges rounded off, which is not the case with the lateral faces. There are numerous grooves on it, quite distinct but not sharp, and whilst most of them are sensibly parallel and have the direction S. 40° E. and N. 40° W., magnetic, a few cross them in different directions.

No. 2, the first we inspected in "Great Zackland," has had a portion broken off recently, but its further destruction was stayed by the proprietor. The remnant is larger than No. 1, and it is much more rounded than that mass. It has on it

two sets or systems of parallel grooves, one having the direction of E. 10° N. and W. 10° S., magnetic, whilst those of the second or less numerous set cross them in the direction of the magnetic meridian.

No. 3, not far from No. 2, is subangular, and has numerous grooves, all in the direction of N. 20° W. to S. 20° E., magnetic.

No. 4, a short distance from Nos. 2 and 3, has probably been disturbed by man. It has two systems of parallel grooves.

No. 5, near No. 4, has also two systems of parallel grooves.

No. 6, also near No. 4, does not appear to bear any grooves.

No. 7 is some distance south of the group 4, 5, and 6. Its length and breadth are nearly equal, some of its edges are partially rounded, and it has two systems of parallel grooves.

No. 8, near No. 7, has an almost square upper face, and does not appear to be scratched.

Of all the specimens, No. 2 is the largest and undoubtedly the most interesting, and No. 1 is probably the next in interest. They all rest on a Slate subsoil, which we saw cropping up in certain places.

In letters, dated 28th June and 7th July, 1875, Mr. Paige-Brown has been so good as to communicate to me some additional facts, of which the following are the most important:—That he has found many small grooved stones, resembling the fragment at his house, showing, he says, that there were originally many others marked besides those we saw *in situ*, but which have been broken; that the grooves or scratches pass through such veins as traverse their courses; that one or two roads in the neighbourhood, being very steep and ancient, have been hollowed below the adjacent soil, in some instances as much as 10 or 12 feet, and that into these many stones of trap work out from the side of the bank, but none of them, though carefully examined, have been found to be grooved; and that the hill forming the eastern wall or boundary of the valley in which the scratched stones lie, reaches the height of about 300 feet above the level they occupy, and consists of a trap identical with the stones, whilst that on the western side of the valley is of a different character.

That the stones have travelled some distance there cannot be a doubt, for whilst they are detached and trappean, they occupy an area having Slate as its subsoil, as already stated.

That they have not travelled far is highly probable from

the fact that trap occurs *in situ* on almost every side of Englebourne, at distances varying from .3 mile to 2.2 miles, to say nothing of numerous remoter masses. Of those in the immediate neighbourhood, one of the largest, about 1.6 mile north, measures 1.7 mile in length by .3 mile in greatest breadth,* and is separated by the little river Harber from a much smaller mass on the west side of that stream.

Their size is so inconsiderable as to leave no room for doubt as to their mobility under the action of waves or violent floods; but to this mode of transport there is the grave objection that, with the exception of No. 2, they are not sufficiently rounded, even though due allowance is made for their hard and tough character.

My experience of glacial scratches is so very slight as to compel me to hesitate before giving a decided opinion respecting the origin of the grooves on the Englebourne stones; but I must confess that it appears to me impossible to account for them otherwise than by supposing them to have been produced by ice-transportation. That the famous granite boulder of Barnstaple Bay was ice-borne I have endeavoured to show elsewhere;† that Bovey Heathfield was during a very recent geological period cold enough to be the habitat of the arctic and alpine *Betula nana* is a well-established fact;‡ that the thick accumulation known as the "Head" on Bovey Heathfield is explicable on the glacial rather than on any other hypothesis, is my decided opinion; and were it not that glacial scratches have never been detected on the lofty tors of Dartmoor, where, if anywhere in Devonshire, they might have been expected, rather than on the low grounds about Englebourne, I should *advocate* the opinion, to which I am now simply *inclined*, that the scratched stones to which Mr. Paige-Brown has directed attention are proofs of glacial conditions in South Devon, and that, as such, they contribute largely to the solution of the problem of the New Red Sandstone boulders of Waddeton, from five to six miles further east.

* The distances and dimensions are all measured on the Map of the Geological Survey of Great Britain.

† See *Trans. Devon. Assoc.*, vol. vi. pp. 211-222.

‡ *Phil. Trans.*, part ii. 1862, pp. 1031 and 1044; *The Lignite Formation of Bovey Tracey*. By W. Pengelly, F.R.S., F.G.S., &c., and Rev. Prof. O. Heer, pp. 13 and 26; and *Trans. Devon. Assoc.*, vol. i. part 1, 1862, p. 38.

ON THE DRIFT GRAVELS ON THE CLIFFS OF THE SOUTH COAST OF DEVON,

FROM LANGSTONE POINT TOWARDS DAWLISH.

BY E. PARFITT.

(Read at Torrington, July, 1875.)

THE only one, so far as I am aware, that has written on this drift is Mr. Godwin-Austin, and to whom I shall allude as we proceed with this paper; but his deductions are to me not at all conclusive as to its derivation, and other peculiarities pertaining thereto, and I venture to lay before you my own views, after a careful examination extending over a considerable time.

This drift is not laid down in our geological maps, and it has, I believe, been by casual observers considered the *débris* or remains of the chalk and greensand; but on examination it will be found that the pebbles include a great variety of formations, and that this variety is not confined to any particular part of the deposit, but scattered throughout the whole mass. Thus we have rounded fragments of several varieties of traps; these are generally of small size, portions of carboniferous or Devonian rocks, such as form the hard bands observed in them, close-grained quartzite, some white and others tinged with oxide of iron. The cherty flints are all of one kind, such as are found in the lower pits of greensand on Haldon and elsewhere; but I could not find a single bit of black or dark flint such as is found in the chalk. Where the drift rests on the trias, there is a band of larger pebbles at the bottom, mostly chert. The lower portion of the drift, for about three or four feet up, is strongly cemented with iron oxide; the middle of the bed is a yellowish sandy clay, in which the various pebbles are imbedded; the upper portion for about three feet is mixed with a whitish clay or marl. Similar to that found in the trias, above this lay the alluvial soil, the whole forming a bed of about fifteen feet thick at the thickest or Langstone Point end. This bed is continued along the face of the cliff for at least three parts of a mile towards Dawlish, where it gradually thins away in a narrow wedge-like form. Towards the farthest end the materials composing

Fig. 1.

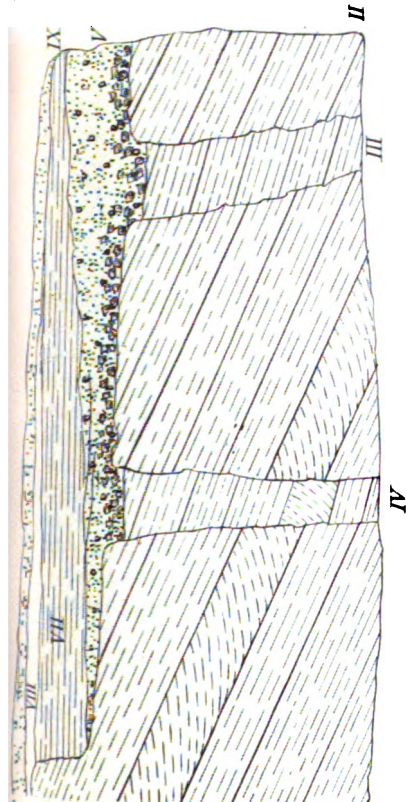


Fig. 1.

Section of Cliff, Langstone Point, near Dawlish.
Length about three quarters of a mile.

- I, Langstone Point
- II, Railway
- III, IV, Faults
- V, VI, Drift Gravels
- VII, Regenerated New Red sand
- VIII, White Clay
- IX, Common soil with broken fragments of Carboniferous shales.

Fig. 2.

Section near Dawlish of Regenerated new red sand, resting on a recent marine deposit, Copied from Mr. Godwin Austen's paper on the Geology of the South-east of Devonshire. Trans. Geol. Soc. V. VI. 2nd Series. p. 447.

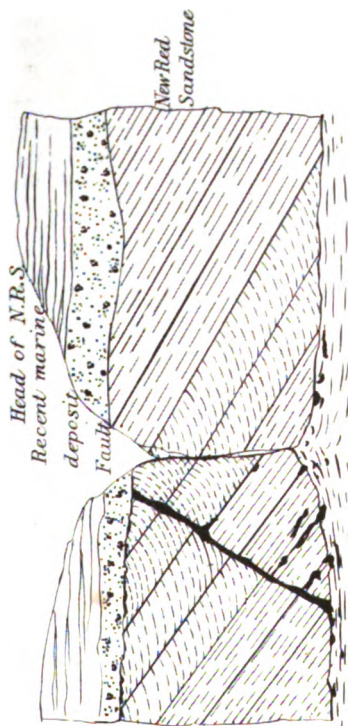
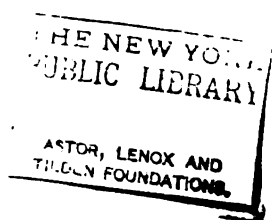


Fig. 2.



the drift gravel grows smaller, but they still retain their yellow colour, except here and there where the bed is interstratified with the regenerated trias. (See plate, fig. 1.)

The trias beds follow the line of deposition as well above this bed of drift as below it; and the drift itself would almost seem to be a portion of the trias, as the white clay or marl overlying the whole is continuous over the drift; on this account it seems difficult to separate the two formations. I find, however, on another close examination with Mr. Ussher, of the Royal Geological Survey, and Mr. Martin, that the beds above the drift, although conformable at the farthest end over the wedge-shaped drift, do not further on follow this line of deposit, but that the beds are horizontal over the drift; and upon very close examination we found the line of junction connecting the regenerated trias with ~~that~~ *in situ*, which forms a double curve just at the end of the wedge-shaped drift.

After a close examination of the whole of this drift for some clue as to the direction it might have come, I found as a rule that the heaviest part of the oblong and ovate pebbles generally had a south-westerly direction, which, if worth anything at all, would seem to point that the direction of the force was from the south-west; but I would not insist upon this, for, considering the whole character of the deposit, it may have been whorled round with some considerable force so as to give direction to these pebbles. I am led to believe that something of this kind happened, and for this reason: that those pebbles of the greatest gravity settled first, and, as before stated, they are found at the base of the deposit; or that the drift gravel was all free at the same time, and was whorled and hurled along in a sudden rush of waters, or I cannot see how the larger pebbles should occupy the bottom of the formation; and the mixed character of the whole deposit would, I think, warrant one at arriving at this conclusion, as there are no signs of stratification to be observed, which I think is against the theory of a regular and systematic deposition. In the fresh cuttings for widening the railway a transverse section of the cliff is exposed, and this section shows that the surface of the trias, previous to the deposition of the drift, was very irregular; the irregularities are apparently water-worn and smooth—it is not scored and furrowed as by the washing of the sea, as we see it now upon the shore, but the irregularities stand up in almost every direction, and the hollows correspond to these; indeed this surface gives one the idea that it was not beneath the waters previous to the deposit of the drift, but that it was exposed

to the wear and tear of the weather—the wind and rain ; for it gives one the impression of the fantastic shapes one sometimes sees in the hard sandstone rocks worn by the weather only.

I am not disposed to favour cataclisms of any kind, but this deposit seems to me to point to something very nearly analogous to one.

The long wedge-shaped continuation of the drift into the trias, reaching as it does for near three quarters of a mile, from Langstone Point towards Dawlish, is somewhat peculiar. The pebbles, towards the end, are of smaller size, as if the force that carried the large ones had been expended outside this cave. I call this hollow in the sand a cave, for I was strongly impressed that it was so, and that the trias above had not been disturbed. I still have doubts as to the regeneration of the whole ; for if we consider the diminution in the size of the pebbles as they progress within this cave or hollow, there must be a reason for such, and the reason seems to me to lie in the expending of the force as the deposit was made. At the same time, it shows that the pressure from without was enough to entirely fill and wedge in the drift in a very compact manner ; it is so compact and firm, and the trias has been apparently so little if at all disturbed both above and below it, that one is almost forced into the belief that it is a part of the triassic formation, instead of being intruded into it.

Hitherto I believe that no fossils have been discovered in this drift ; I have hunted it over many times, but never succeeded in finding one until April last, when, about seven feet from the surface, I discovered a chert pebble containing the casts of three specimens more or less perfect of what I take to be *Inoceramus concentricus* (Parkinson), a species found in the gault at Folkestone, and in the upper greensand at Pinhay and Haldon. Since finding this, Mr. Ormerod has brought me a rather large chert pebble containing fragments of a *cardium* ; this pebble was obtained in a road cutting on the hill between Dawlish and Teignmouth. These fossils are only confirmatory, so far as they go, of the cherty pebbles being derived from the greensand. Mr. Ussher also found an imperfect cast of a plate of an *echinus*, but how far they may have travelled, or how nearly derived, it would be impossible to say. The mass of drift may have travelled some considerable distance, as most of it is much rounded and worn. The chert is, perhaps, the least rounded ; but considering its hardness, the abrasion is not so easy.

Mr. Godwin-Austin, in the *Transactions* of the Geological Society, 2nd series, vol. vi. pp. 446-47, sect. 3, on "Surface Accumulations at Higher Levels," and which I here transcribe, says: "Over most parts of the district here described, particularly within the combs of the new red sandstone series, are thick accumulations of local *débris*, as if during the formation of the valleys the finer particles had been removed and the coarser alone left. In the Dawlish valley, associated with materials from the new red conglomerate strata, are others derived from the cretaceous series, the whole mass being upwards of forty feet thick. Similar accumulations are scattered over the whole of that part of Devon which intervenes between the Haldons and Black-downs; and those in the valley of the Otter present as great an admixture as the deposits of Dawlish; but proceeding eastward, as in the valley of the Sid, Salcombe, Weston, and Branscombe, the collection consists of chalk-flints, flint-breccia, and sandstone, and materials from the harder beds of the greensand. These accumulations are not confined to the valleys, but invest the slopes and crown the summits of many minor ridges, as those which lead up to the Haldons. In thus classing together the accumulations on the high grounds with those in the bottoms of valleys, it is not implied that they are of the same geological age, or referable to some particular period of dispersion, but that they are the results of those agents which for a long period of time must have been in operation over this district, and produced the actual configuration of surface."

Fig. 2 represents a road section near the summit of the hill west of Dawlish.

A bed of marine *débris* rests on the uneven surface of the new red sandstone, and above it is a thick mass of regenerated new red sand in regular layers, but without a single pebble of chert or flint, and the uppermost mass is another thick bed of *débris*.

"In the cliffs east of Dawlish is a similar thick deposit of pure regenerated new red sand, resting on a bed of materials from the chalk or greensand series."

Referring now to the last paragraph of Mr. Austin's paper, I would say, with all deference to so high an authority, that although the deposit under consideration does contain materials from the greensand, I am convinced that it would be exceedingly difficult, if not quite impossible, to find any remains from the chalk; and so far as my observation goes, I have never been able to find any. And although this *débris* is made up of a great variety of materials derived

from various formations, I have not been able to detect any fragments of granite, except it be one dark lead-coloured schorlaceous piece, which is doubtful (I think it is what is termed *ryakolite*), but nothing like the Dartmoor granites. But the several varieties of trap are plentiful as water-worn pebbles, and dark-coloured river sandstones are abundant. The harder parts of the Devonian or carboniferous formations are numerous; but not a single black or chalk flint. The whole mass, then, is an accumulation that has probably drifted from some considerable distance, and has not been directly derived from the chalk and greensand, as stated by Mr. Austin.

Again, I think any one carefully examining this drift, as well as that referred to as a "bed of marine *débris*," will be forced to the conclusion that, according to the acceptance of the term employed, it cannot be "marine *débris*," or if it be so, the sea has left nothing to warrant such an assertion. That the mass was drifted by water, and not by ice in this particular case, I think is tolerably clear from the largest pebbles forming a band at the bottom, and that the whole mass was in motion at one time, so as to allow these to settle to the bottom first, being the heaviest. If ice had been the carrier, this could not have been the case, as they would then in all probability have rested where deposited, and could not have gravitated to the bottom. I am here speaking of the deposit at Langstone Point only.

Again, in correlating this drift with that found at the back of the railway station at Dawlish, and onwards at intervals to and beyond the tunnel, it would seem here that this drift had been subjected to a force giving the pebbles no chance of settling in accordance with their specific gravity; for the mass is mixed up in the utmost confusion, and the larger pebbles are scattered through the mass without any arrangement whatever.

The matrix in which the pebbles are imbedded is different in colour, more approximating to that of the trias, but not of so deep a red; otherwise the materials composing the drift are the same as those at Langstone Point. This drift from the railway station to the tunnel approximates closely with those of the higher river gravels, both in the colour of the matrix and the irregularity of the deposit of the materials. I think they can to a certain extent be identified with these higher level drifts in the river valleys. If so, it would give an enormous time for the rivers to have cut their beds so much below these levels as they are now (and this drift, it must be

remembered, is one of the latest geological phenomena); for, viewing all things equal—that is, if the volume of water in our rivers, and the wear and tear of such, and the materials brought down from the higher levels, were no more than at present; the time that would occur for the rivers to cut their way through rocks, &c., to such a depth as they now occupy below the higher drift gravels must be enormous.

But my impression is, that in those early times of our rivers, and of the higher drift gravels, there was a much greater volume of water flowing through the river valleys than at present; for this reason: the higher drift occupies a similar height on each side of the wide valleys, showing, I think, that at the time of this deposit the whole valley was filled with water, and that the shifting of the river from side to side of this valley is not sufficient for the explanation. If it had shifted from side to side, it would in all probability occupy a very considerable time in so doing; and if so, it is not at all likely that the two sides would show the same height of deposit of the drift gravels. That these gravels do occupy similar levels can be easily verified in the Exe valley on the Cowley Bridge road, and on a ledge of rock on the opposite side of the valley beyond the Rock at Exwick, and in several other places. These higher level gravels, or drift, are generally set in a matrix of sandy clay, mostly of a whitish or yellowish tint, different from that lying below them. The materials imbedded in this clay are generally composed of hard dark river sandstones, apparently derived from the harder portions of the Carboniferous grits and shales, very much water-worn, and mostly flattened, I presume from being derived from the hard shaley bands of the carboniferous rocks. Among these, and forming a very conspicuous proportion, are the somewhat large pebbles of chert and traps. These, where a fair section can be seen, occupy the upper portion of the gravel-bed. These, it would seem, were deposited first, and are consequently the highest in these beds.

Now it does not require a very great stretch of the imagination to connect these early-deposited cherts with the same material overlying certain portions of our cliffs, and also inland. If this be the case, the theory of its being a raised beach, or marine *débris*, falls to the ground. So far as I have been able to examine this subject, there is not the least trace to be found of the sea having anything to do with these drifts. They cannot, so far as I can see, be at all connected with the true raised beaches containing marine shells such as are now found in the British seas. We must, I think,

look to some other agent for the breaking up of the beds in which the chert pebbles were originally deposited. The greatest difficulty of all, perhaps, is to account for the rounding of the trap and other pebbles. As they have all been subjected to considerable attrition, it is rarely that angular fragments are found. But this is not peculiar to our drift here; for rounded pebbles are found in the "till" in Scotland of unmistakable ice origin. Sir C. Lyell says (*Elem. Geo.*, p. 153, 6th edition): "The rarity of angular stones, those in the till being usually rounded or sub-angular, and the number of fragments polished and striated on one or several sides, may also be explained by supposing the till to have been shoved along under a heavy mass of ice, like that of Greenland, instead of forming parts of superficial moraines, carried down without trituration on the top of the ice."

Mr. Austin says: "These accumulations are not confined to the valleys, but invest the slopes and crown the summits of many minor ridges, as those which reach up to the Haldons. In thus classing together the accumulations on the high grounds with those in the bottoms of valleys, it is not implied that they are of the same geological age, or referable to some particular period of dispersion; but that they are the results of those agents which for a long period of time must have been in operation over this district, and produced the actual configuration of surface."

This statement, I think, is too general. No attempt is made to classify these drifts; and I do not think, from my study of the subject, that they can be attributed to the agents indicated in the above quotation; namely, time and atmospheric conditions, as I presume Mr. Austin means.

We have seen that the highest river deposits occupy the same levels in, say, the Exe valley, and that these deposits are different from those below them, that they contain a larger percentage of chert, and that these are generally imbedded in a whitish sandy clay or marl. In the valley of the Thames, as described by Professor Phillips (*Geol. of Oxford and the Valley of the Thames*, pp. 457-8), he says: "But besides these gravels, sands, and clays, observed on the bed or on the lower slopes of the Thames basin, we find, sometimes in great quantity, and often widely scattered over hills and dales, a variety of gravels and sands, or else of clay charged with angular, rolled, or rubbed stones, which have been brought from distant parts of England, or even from beyond the Isles of Britain. To these I assign the title of *hill deposits*, not that they are exclusively found on elevated

ground, but because this fact is characteristic of them in contrast with others. Scattered materials of these hill gravels are often found in the low ground mixed with those in the true valley deposits, under circumstances which indicate the anterior date of the former.

"These hill gravels are composed of materials which it is impossible to suppose to have been drifted at any time or under any circumstances by water flowing as a river or inundation from atmospheric precipitations; the extent of ground occupied, and the nature of the pebbles and fragments, imply the agency of wide open streams, mostly directed from the northward to the southward, a marine origin is thus found for the hill gravels, but I am not aware of any modern reliquiae of the sea being found in them within the drainage of the Thames, though ancient fossils are common enough among them in particular places."

This description would almost equally apply to this district as to that of Oxford and the valley of the Thames; and the same might be said, or nearly so, of the drift of the eastern counties and of Scotland; and with this I think we may include, with very little exception, the whole of the British Isles. Now, whether this drift can be attributed, as Professor Phillips suggests, to marine currents, that the whole land having been sunk for a short time beneath the waves, I cannot bring myself to think this; and that the sea should have left no marks, no *débris* or rejectamenta to mark its possession of so wide an area, is, I think, opposed to the theory. This cherty high-level drift was, so far as I can ascertain, the first deposited by the river, and the materials the first to be broken up by the agent employed to do so.

To deposit these cherts at so high a level, we must have a much greater volume of water for so doing flowing through those valleys; and that the volume entirely filled the valleys at the same time, I think it is explained by the same deposit occurring on both sides at the same levels.

Now to bring about such results we must have an agent or agents, and these are, I think, *ice* and *water*. Let us then put ourselves back into the glacial period, when the neighbouring mountains of Wales were covered with ice and snow, and the valleys filled with glaciers, as we know they were; and from the close proximity of Devon to Wales, I think we must allow the probability of Devon also being included in the ice sheet, or at least the higher parts of it; and although we have not found marine shells on Dartmoor and on other high lands the same as found on Moel Tryfaen in stratified drift at a

height of 1,400 feet on the south side of the Menai Straits, yet we have drift gravels containing a vast amount of different materials probably derived from some considerable distance; and comparing this drift of our cliffs and hills with that so graphically described by Sir C. Lyell and others, I think we may justly infer, from the deposition and the general character of our drifts, that these may be attributed to the same cause as those of Wales and elsewhere.

In some places, even in close proximity, a difference would be seen where the drift had been deposited or driven forward by the ice; at others, on the melting of the ice in the summer season, large masses of water would pour down in cataracts, and so carry forward in a mass the broken-up materials forming the drift similar to that found on Langstone Point. I think now we can see our way tolerably clear to account for the large masses of water that must have poured down the valleys on the melting of the ice, enough to fill the valleys at this time, and deposit the chert and other materials, which had previously been broken up, and probably carried onward by the ice and water.

I do not think that the land has been submerged since the time when the greensand beds and the carboniferous rocks were subjected to the action of the ice; but I would attribute the different modes of deposition of the drift to the action of the ice in one place, and to the water derived from the melted ice in another.

That the shores of Devon have been much lower than at present we have abundant evidence in the raised beaches on both the north and south coasts; but whether these beaches were formed after the glacial period or before it I don't think we have any evidence to show; but if the whole land had been submerged, as some suppose, I don't see why marine shells, &c., should not have been preserved on the main land as well as on these particular beaches. But even with such a depression as these beaches indicate would not place the land on which the drift is found under water; and so far as I am aware we have no other evidence of a submergence in recent times, that is since the marine fauna of the British seas was the same as now. And we have not a shadow of evidence, so far as I know, of this drift being a "marine *débris*" according to the general acceptance of this term.

The rather thick beds of whitish clay overlying a good deal of the regenerated trias would, I think, have retained any marine shells or other *débris* without destroying them had this been a marine deposit.

BIOGRAPHICAL NOTICE OF
THE LATE MR. THOMAS FOWLER, OF TORRINGTON,
WITH SOME ACCOUNT OF HIS INVENTIONS.

BY REV. HUGH FOWLER, M.A.

(Read at Torrington, July, 1875.)

I HAVE been requested by some kind and indulgent friends here to put together a few memoranda respecting my late father, Mr. Thomas Fowler, of this town, and to throw them into the form of a paper to be read before this Association. After some consideration, and after enquiry whether such a paper would be in accordance with the declared objects of the Association, I have consented to do so. I am informed by our Secretary that papers are expected to contain something new, and that they should not take the form of a popular lecture. I find, however, that biographical notices have sometimes found a place in the proceedings of the Association; and these, as being records of the past, can hardly be expected to contain much of novelty. The main difficulty in dealing with biographies is the avoidance of an excess of dulness. If, therefore, I transgress the first of our Secretary's injunctions, I shall probably not violate the second. After all, I should not have ventured to appear before you if I were not in a position to claim for my father the credit of an invention which is still in universal use. He was indeed, as many present know, a man of high attainments, especially in mathematics and natural science; but distinguished mathematicians and students of natural science are not so rare amongst us that they should in all cases deserve a public notice like this. Mr. Fowler's special claim to notice, I repeat, is that, at least in one particular, he fulfilled Bacon's condition, and produced "fruit" as the result of his investigations. The invention to which I refer is the well-known method of heating buildings by hot water circu-

lating through pipes. The fact that he was the sole inventor and patentee some fifty years ago is not equally well known. You will, I trust, bear with a son's natural pride in his father's genius while I occupy the short time allotted to me, first in giving a few particulars of his life, with some other instances of his inventive power; and then in substantiating his claim to this particular invention, with a short description of its principle.

He was born in this town nearly a hundred years ago, in the year 1777, of humble parentage, his father being a cooper. He received the barest rudiments of education—not more, certainly, than the three R's—at a small school here. He was apprenticed at an early age (about 13 or 14, I think) to a fellmonger. It was at this time that his taste for mathematical study began to develop itself. I have here, and I shall always retain as an heirloom, the very book, *Ward's Mathematician's Guide*, the only one on the subject which he for a long time possessed. This book, as is usually the case with the *homo unius libri*, he thoroughly mastered, and that without the slightest help from any one. No one could have been more entirely self-taught than he was. Mathematicians in those days were very scarce in this part of Devonshire, and probably elsewhere, even in the great centres of education. The country was then lying under the incubus of the French war, and neither this nor any other of the arts of peace could possibly flourish as they have done since. Few people, if any, of this town or neighbourhood knew, or if they knew, cared, that there was in their midst “a wondrous boy,” who, absolutely self-taught, after his hard day's work among sheepskins spent half the night poring over his mathematics, until he had gone so far as to master Saunderson's fluxions, the name by which the method of the differential calculus, as far as it was then known, was designated. There was no one, alas! to take him by the hand, and help him to carry on his studies at Cambridge, where alone such talent as he undoubtedly possessed could either have been fully developed or adequately rewarded; for that he would have distinguished himself at the University there can, I think, be no question. So he was left, without help or sympathy, to his solitary studies. Yet he did not relax on this account; in fact he never wholly laid them aside to the hour of his death. His whole life was spent in Torrington. He established himself here as a printer and bookseller (his printing-machine, by the way, he made with his own hands on a plan of his own invention); and he afterwards became

clerk, and then partner and sole manager, of the only bank in the town. I must not now dwell on the deep debt of gratitude which his children, and not one of them more than myself, owe to his memory for the sacrifices he made that they might have the advantages of education which he had himself longed for in vain. It gives me much pleasure to say, that later in life my father had no cause to complain of want of interest in his pursuits on the part of gentlemen and others of the town and neighbourhood. Some of his kind and sympathizing friends are, I think, now present; others have passed away, among whom I may mention the Archdeacon Stevens, Mr. Charles Johnson, Sir Trevor Wheler, and Lord Clinton as having done all in their power to encourage him in his work, and to bring his inventions under public notice.

Mr. Fowler's belief, I know, was that his fame would mainly rest on his calculating machine. He first constructed one in the year 1840, and afterwards another, greatly improved, in the year 1842. Being of wood, it was necessarily of large size, filling, as nearly as I can remember, a cubic space of about five feet high by four broad, and the same depth. This machine was for some time exhibited in the museum of King's College, London. I remember myself working it there in the presence of several scientific men, who expressed satisfaction with the rapidity and accuracy with which I brought out long sums in multiplication and division as far as ten figures by ten figures. My father was strongly advised to construct it in metal; and he would certainly have done so if he had had the means. But the cost would have been very great; and this made it impossible. The machine was in London at the time of my father's death. Some time after I was requested to remove it. It was taken to pieces, packed in a case, and sent down to me. I have the *disjecta membra* still in my possession, but in so fragmentary a condition that they cannot again be put together. I have also a printed description, very minutely drawn up, of the mode of construction and working. One of these papers is full of painful interest to me as having been dictated by my father to my sister on his death-bed, while in great suffering from the disease of which he soon after died. The following extracts from a letter addressed to Mr. Francis Baily, a distinguished *savant* of his day—I believe a F.R.S.—contain my father's account of the capabilities of the machine: "I find it practically useful for all, even the most extensive calculations, for the public funds, interest, commission, ready-reckoning, to the millionth part of a

farthing, . . . and even for the calculation of logarithms, or for finding the natural number to any logarithm, which the machine exhibited in London is capable of, in a singularly beautiful and concise manner, to twelve or thirteen places." He speaks also of its adaptability to any scale of notation. It is sad to think of the weary days and nights, of the labour of hand and brain, bestowed on this arduous work, the result of which, from adverse circumstances, was loss of money, loss of health, and final disappointment. If the machine could have been constructed in metal, as he so much wished, it might be in use even to this day, the mechanism, unlike that of Babbage, being so simple and yet so effective.*

Yet calculating machines are no mere philosophical toys. The arithmometer of M. Thomas de Colmar, a description of which I have in this pamphlet,† is used extensively in connection with electrical computations; and I have a letter from my friend, Professor Adams, of Cambridge, in which he informs me that one of Thomas' machines is in constant use there in the observatory, and that it is most valuable in shortening the tedious processes of astronomical calculations.

In the year 1838 Mr. Fowler published his *Tables for facilitating Arithmetical Calculations, intended for calculating the proportionate charges on the parishes in Poor Law Unions; and useful also for various other purposes*. He was at the time treasurer of the Torrington Union. In the preface he speaks of the trouble of making these calculations by the ordinary method; of his trying common logarithms, and so abridging the labour, but not to any great extent. He then says: "Happily I hit on the idea that any number might be produced by a combination of the powers of 2 or 3, and consequently that the same indices of the powers that produced any two or more numbers would also represent any other two or more quantities bearing the ratios of these numbers one to another respectively. I now saw that my object was attained, and that I had only to form a table of consecutive numbers, with the corresponding indices of the powers of 2 or 3 that would produce them." I do not know whether this method is still in use in Poor Law Unions, as it was for some time in Torrington and elsewhere. There is no doubt, however, that my father's method does greatly facilitate

* The government of the day refused even to look at my father's machine, on the express ground that they had spent such large sums, with no satisfactory result, on Babbage's "calculating engine," as he termed it.

† *Instructions for the use of the Arithmome'er, or Calculating Machine, invented by M. Thomas (de Colmar)*. Paris: L. Guerin, Rue du Petit-Carreau. 1862.

these troublesome calculations. As it is probably new to many present, I will try to explain it, taking only the binary table, in which we have indices of the powers of 2. Now any number whose index is 0 will be 1, as in the algebraic formula $x^0 = 1$. Then, since $2^1 = 2$, we have 2, index 1; 3 will be represented by the two indices 1, 0; 4 is 2^2 ; therefore we have 4, index 2. As the numbers go on, the indices are written in succession with the greatest ease and rapidity. An easy example will sufficiently illustrate the use of the tables. The example given in Mr. Fowler's book is purposely as difficult a one as could well be supposed likely to occur in ordinary practice, as it goes to farthings and decimals of a farthing.

No.	Indices of the powers of 2.
1	0
2	1,
3	1, 0.
4	2
5	2, 0
6	2, 1.
7	2, 1, 0.
8	3
9	3, 0
10	3, 1.

No.	Indices of the powers of 2.
32	5
33	5, 0.
34	5, 1.
35	5, 1, 0
36	5, 2.
37	5, 2, 0
38	5, 2, 1.
39	5, 2, 1, 0
40	5, 3.

Let us suppose an average annual assessment on five parishes to be £1,000. Parish A is assessed in £360, B in £230, C in £180, D in £160, E in £70. The amount (say) of £150 is required to be raised among these parishes. Of course a simple problem like this might be more expeditiously worked by the common arithmetical rule of proportionate parts. I only take it by way of illustration.

Indices.	£	s.	d.	
9 =	76	16	0	
8 =	38	8	0	
7 =	19	4	0	
6 =	9	12	0	
5 =	4	16	0	[The power taken for the proposed ratio.]
4 =	2	8	0	
3 =	1	4	0	
2 =	0	12	0	
1 =	0	6	0	
0 =	0	3	0	

Take some convenient power of 2 (say the fifth) as the third term of the ratio. As £1,000 : £150 :: £32 : £4½, whence we gather that the value of the fifth power in this ratio is £4 16s. A table is then constructed where the terms downwards from the fifth power are successively found by *dividing* £4 16s. by 2, and upwards by *multiplying* by 2, as far as may be needful. Now the assessment of parish A being £360, we look out this number in the tables, and find the indices to be 8, 6, 5, 3. Taking their values from the table, we have:

Index.	s	s.	d.
8 =	38	8	0
6 =	9	12	0
5 =	4	16	0
3 =	1	4	0

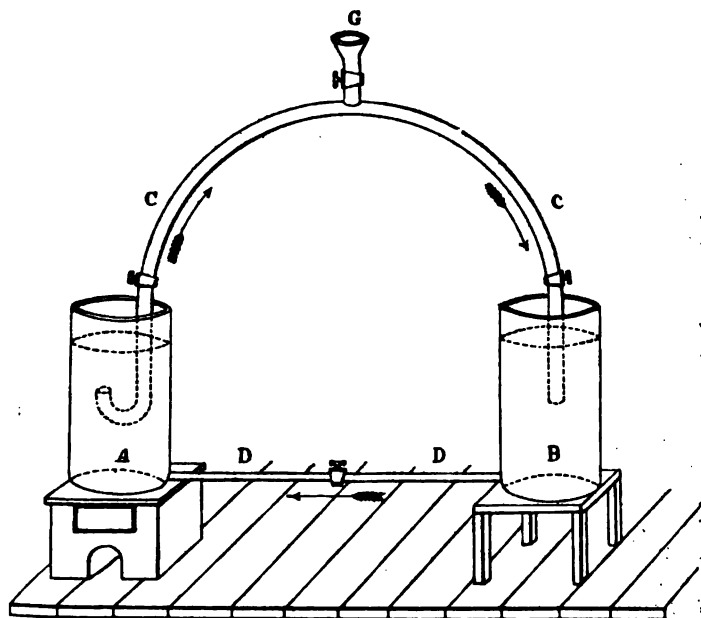
£54 0 0 The contribution of parish A.

So, B's assessment being £230, the indices of which number are 7, 6, 5, 2, 1, we have as B's contribution £34 10s. In the same way, C's assessment being £180 (indices 7, 5, 4, 2), its payment will be £27; that of D (£160, indices 7, 5), £24; that of E (£70, indices 6, 2, 1), £10 10s. Then £54 + £34 10s. + £27 + £24 + £10 10s. = £150 as required. The tables are in fact a simple and ingenious modification of the method of logarithms.

I now come to the thermosiphon. Its principle is very simple, and I shall not occupy your time long in describing it. The diagram before you represents it in its most simple form, but not as it is applied to any particular purpose.

A and B are two open vessels, of which A is set over a fireplace. They are united by the connecting-tube D. C C is a tube bent into the form of a siphon, and so suspended that its ends are immersed about half-way in the water in the two vessels. There is a cock at G, through which the siphon is filled. The end in the vessel A is bent with its orifice upwards, to prevent the air-bubbles from the bottom of A, when heat is applied, from going into the tube and lodging in the upper part. I need not dwell on the details of the mode of setting the apparatus at work, stopping and opening cocks, and so on; I will go at once to the *rationale* of the process. You know that in the common siphon with two unequal legs the flow of water out of the vessel in which the shorter leg is immersed is due to the difference of the weights of the columns of water in the two vessels acting against the atmospheric pressure. In the thermosiphon the legs are of equal length. Here therefore, the pressure of the

atmosphere being equal at both surfaces, there is perfect equilibrium as long as the temperature in the two vessels is equal. Now if heat be applied to vessel A, the water will expand. The fluid at the end of the tube in A becomes specifically lighter than that in the other end in vessel B; this at once destroys the equilibrium. The tube begins to



act as a siphon; the warm fluid rises, and the cold water descends in B, and flows through the connecting-tube D into A. The circulation then goes on with increasing rapidity, the more if the descending leg be kept as cold as possible. The extreme height to which the fluid will rise in the thermosiphon is of course limited by the force of atmospheric pressure to about thirty feet.

I cannot now speak of the thousand ways in which this discovery, beautiful in its simplicity, has been and is still made available. I may, however, mention one way in which, interesting though it is by way of illustration, the thermosiphon has *not*, I venture to say, been often used. Mr. Petherick, of this town, who was employed by my father at the time to fix the apparatus at Castle Hill, Bicton, and elsewhere, tells me that he remembers a leg of mutton being

boiled in a vessel placed forty feet from the fireplace, oil being used as the circulating fluid, and the pipe containing it made to pass through the water in the vessel in which the mutton was boiled. I need not remind you that boiling oil is hotter than boiling water.

It only remains that I affirm, without fear of contradiction, that wherever heated fluids circulating through pipes are used for the conveyance of heat, this principle is applied. As I said at the outset, my chief object in coming here to-day is to prove my father's claim to the honour—a barren honour though it has been to him and to his family—of an invention which is actually now in use in all parts of the world. I take my stand on the date of the patent which I here exhibit to you, the year 1828; and I affirm that the mode of heating buildings with hot fluids, as described in the specification appended to the patent, and in this pamphlet,* was at that date absolutely new and unknown. My father met with the proverbial fate of inventors under the then wretched state of the Patent Laws. The invention was very soon pirated in all directions. There was no remedy but by costly legal proceedings; and even if he had had the means to conduct them, success would have been very doubtful; for the slightest modification of the principle of an invention seems then (I do not know how the law stands now) to have been sufficient to bar the penalties of infringement. But surely it is a monstrous thing that unscrupulous men should be able to make large fortunes, as they so often have done with impunity, by picking other people's brains. *Sic vos non vobis!*

* *A Description of the Patent Thermosiphon, with some modes of applying it to horticultural and other useful and important purposes.* London: Longmans. 1839.

TAWTON—THE FIRST SAXON BISHOPRIC OF DEVONSHIRE.

BY J. R. CHANTER.

(Read at Torrington, July, 1875.)

THE little village of Tawton, near Barnstaple, North Devon, has been traditionally reputed as the seat of the first bishopric of Devonshire, and to have been thence designated Bishop's Tawton; and it has been so recorded in all the early histories of the county and diocese, as well as by Camden and most of the ecclesiastical writers.

The accuracy of the statement has, however, been latterly called in question by Dr. Oliver, who considers the account given by earlier writers to that effect as "void of historic authority;" and he ignores altogether the two earlier bishops, Werstan and Putta, said to have had their sees at Tawton, and fixes the seat of the first bishop at Crediton at a later period. The matter is, perhaps, at the present day, scarcely worth discussing, were it not that the assumed historical fact of such a remote and for many subsequent centuries so little known district, having been the seat of an Anglo-Saxon bishopric, has been made use of in some local historical publications as one of the circumstances showing the distinct character, the comparative importance, and extensive population of North Devon in the earlier periods of English history. I have, therefore, been led to search and make notes of what has been recorded about it; and I now propose to marshal all the authorities I have been able to refer to at all dealing with the subject, commencing with the early monkish chronicles describing the extension of the episcopate into Devonshire, and then taking up the local and other historians referring especially to the bishoprics of Tawton and Crediton, with a view of forming a judgment as to how far Dr. Oliver's objection is well founded.

One of the earliest of these chroniclers, William of Malmes-

bury, whose history of the kings of England, and of his own times, written, in continuation of Bede, about 1120, has always been considered an indubitable authority, sets out the circumstances which led to the appointment of bishops in the West of England very fully; and his chronicle, with the list of bishops given by Florence of Worcester, appears, in fact, the foundation of most other accounts of the subject. "In the year of our Lord's nativity 904, Pope Formosus sent letters into England, by which he denounced excommunication and malediction upon King Edward and all his subjects because for seven whole years the entire district of the Gewisi, that is the West Saxons, had been destitute of bishops. On hearing this, King Edward assembled a Council of the Senators, over which presided Archbishop Pleimund." The details of the Council are set out at length, the result being: "They elected and appointed one bishop to every province of the Gewisi, and that district which two had formerly possessed they now divided into five. The council being dissolved, the archbishop went to Rome with splendid presents, appeased the Pope with much humility, and related the king's ordinances, which gave the Pontiff great satisfaction. Returning home, he ordained in one day seven bishops to seven churches—Fridestan to Winchester, Adelstan to Cornwall, Werstan to Shireburne, Adelelm to Wells, Edulph to Crediton."* Mr. Hardy, the translator of the edition of William of Malmesbury, published by the Historical Society, and Stevenson, the editor of the *Church Historians*, state that this account is derived from a MS. in the Bodleian library, given by Bishop Leofric, but they point out that the anachronisms and confusion of names and dates render the account open to suspicion, and doubts have even been thrown on the whole story of the council or synod; but the same facts, in whole or part, have been narrated by so many other authors, both contemporaneous and subsequent, as to render it neither likely nor credible that the whole is a forgery. Some of these authorities are here quoted.

The *History of the Archbishops*, by Ralph de Diceto, written about 1205, says: "Pleimund consecrated Edward, son of Alured, king of England. This Pleimund presided at a council which King Edward had assembled, in which it was decreed that any district of the West Saxons which had been deprived of a bishop for seven years should be again restored, and that where there had been two there should thenceforth be five. When the council was dis-

* William of Malmesbury (*Church Historian* edition, 1856), p. 113.

missed, the Archbishop proceeded to Rome and recited the King's decrees, which gratified the Pope. On his return to his own country, he ordained for the churches in one day seven bishops."*

The following chroniclers also describe the affair:

Roger of Wendover's *Flowers of History*, about 1200: "In the same year, 899, died Ethelwald, Bishop of Sherburne; after which, from hostile violence, the province of the West Saxons remained seven years without bishops."†

"In the same year, A.D. 905, King Eadward and Plegmund, archbishop, assembled a great council of bishops, abbots, and others in the province of the Gewisi, which, on account of the incursions of the enemy, had been for seven years without episcopal and pastoral care. It was, therefore, most wholesomely decreed that instead of two bishops five prelates should be created, that the Lord's flock might not be deprived of pastoral care by the incursion of wolves. A canonical election, therefore, took place, when they appointed Frithstan to the see of Winchester, Ethelm to that of Sherburne, Eadulph to Wells, Werstan to that of Crediton, and Herstan to that of Cornwall."

Matthew of Westminster (beginning of the 14th century),‡ uses almost exactly the same words, having apparently copied his statement from the *Flowers of History*.

The chronicle of Florence of Worcester,§ which was based on the Saxon chronicle, the continuation and appendices of which date about 1144, gives a list of the bishops of England, and among them "the names of the bishops of the church of Crediton," the first of whom is Eadulph, who is elsewhere in the same book described as having died in 932, after twenty-two years tenure of the bishopric, thus showing his consecration to have been in 910. The Saxon chronicle itself has no reference to Crediton until 977, but fixes the date of the transaction by recording that Frithstan, who was consecrated the same time as Edulf, succeeded to the bishopric of Winchester in 910.

A less known chronicle, by Gervase of Canterbury, written about 1180, in narrating the acts of St. Plegmund and his journey to Rome in 905, says that on his return into England, by the command of the Pope and consent of King Edward, he appointed seven bishops to as many churches which at that time were vacant in England, and he consecrated seven bishops in one day.

* Edition 1866, p. 320.

† Vol. i. p. 48.

‡ Bohn's edition, vol. i. p. 235.

§ Pages 378 and 240.

The English history,* assumed to be by Ingulph, Abbot of Croyland, who died in A.D. 1209, gives another and somewhat varied account of the synod and appointment of bishops, naming, among others, Adulph as the first bishop of Crediton. His chronology also has been pronounced singularly faulty, but he refers to the transaction being about the close of Edward's reign.

The latest notice of the subject by an ecclesiastical or monkish writer is made by Polydore Vergil, who wrote about 1510, who is said to have derived the materials for his history of England from original sources other than the old monkish chronicles before quoted, and to have subsequently destroyed most of his authorities. Sir H. Ellis and other critics have pronounced his mistakes to be very few, and that his care in weighing facts and testimonies show him to have been a historian beyond his age, both in his power of discrimination and his acquirements.† He confirms the general fact of the synod, but gives no details of the bishops. "At this time the Christian faythe waxd verie cowle amongs the Western menn biecause there was no busshopp there to instruct the people, the defaulte was in the prince, wherfor Jhon, Busshopp of Rome, being greetlie moved, did correpte and chide King Edward in his letters, menacing that he would denounce both him and his people enemies to relligion unless he would speedilie send for busshoppes, which, when the king had welle degisted, he so debated the matter with Pleimundus, Archbusshopp of Canterburia, that he, immediatelie calling a congregation, did consecrate many busshoppes for the better governing of the dioceses."

John Hooker of Exeter, better known as Vowel *alias* Hoker, the well-known antiquary and scholar, who has been largely quoted by all subsequent writers on church matters and local history, and whose investigations date from 1555 to 1584, among other works published *An Orderly Catalogue, with Authentic Memoirs of all the Bishops down to 1583*. He also compiled a *Synopsis Chorographical of Devon*, with lists of eminent men, which does not appear to have been printed, but has been quoted and made use of by Prince and the later Devon historians. Hooker sets out in full the history of the establishment of the bishopric and the history of the council, and continues: "And then Plegmundus, at the command of King Edward, erected three new cathedral churches—one at Wells, one at Bodmin, and one at Tawton,

* *Church Historians*, INGULPH, p. 617.

† POLYDORE VERGIL'S *English History* (Camden Society), p. 228.

for the county of Devon ;" and he then proceeds to memorize the names of the bishops as follows :

"Werstanus was the first who fixed the episcopal chair at Tawton, a small village about a mile and a half to the south of Barnstaple, which from thence retaineth the name of Bishop's Tawton unto this day. At a provincial synod holden in Wessex anno. 905, he was consecrated Bishop of Devon, and had his see at Tawton aforesaid, where, having sat one year, he died, and was buried in his own church there.

"His successor was Putta, who also resided at Tawton, but as he was on his journey towards Crediton to pay his obeisance to the king, or, as others say, to visit Uffa, the king's lieut. there, he was, by some of Uffa's servants, barbarously slain on his way thither. This proved the occasion of removing the episcopal chair from thence unto Crediton.

"The third in order, but the first of this place, was Eadulphus, who was consecrated Bishop of Devon, but installed at Crediton anno. 910, where he continued upwards of twenty years."

Camden chronicles in his *Britannia*: "Passing Chettlehampton, a small village where Hyertha, canonized a shee saint, lyeth interred; from thence having passed by Tawton, where Werstane and Putta, the first bishops of Denshire, had their see about the year 906."*

Risdon, writing about 1630, says: "Bishop's Tawton, a place remarkable for being the first bishop's see in this shire, A.D. 905, when Edward, surnamed Senior, a nurse-father of the church, finding these western parts to want ecclesiastical discipline, by the advice of Pleymond, Archbishop of Canterbury, ordained a provincial synod, and decreed that three new bishops should be consecrated; whereupon Edulph was appointed to Wells, Herstan to Cornwall, and Werstan to Devon, who had here his see, where after him only one of his successors sate, being hence removed to Crediton."†

Westcote, about the same date, describing the river Taw, goes on to say: "And here at Tawton he leaves his name, and with due respect tenders his service to the place where the episcopal chair of the diocese was first placed; for here King Edward placed Werstanus, and after him sat Putta; and hence it took the adjunct of Bishop. But our river had the priority to name it first Tawton, ere the king could honour it with the reverend chair."‡

And in referring to Crediton, "I have told you how the whole body of the county was under the Bishop of Tawton,

* CAMDEN, *Denshire*, p. 208. † Risdon, p. 321. ‡ Westcote, p. 289.

to which, upon the death of Putta, the last bishop thereof, Eadulphus was installed at Crediton, and taken for the first bishop thereof, and named Bishop of Crediton. He kept his seat twenty-two years, and was buried in his own church.”*

Sir William Pole, who in all matters of genealogies and successions has always been considered the most painstaking and accurate, as he was the first, of the Devonshire historians, gives a list of bishops in his account of the barony of the bishopric of Exeter. “Werstan was, by a general counsell holden before Plegmundus, Archbishop of Canterbury, elected Bishop of Devon, anno Dmi. 905. His sea was at Tawton, now called Bishop’s Tawton. He was bishop but on yeere, and was buried at Tawton. Putta was the next Bisshop of Tawton, and was slayne in his journey towards Crediton to visit the king. Eadulphus, brother unto Alpsius, Duke of Devon, succeeded Putta, and was installed at Crediton, where he contynewed twenty-two years, and was buried theire.”†

Bishop Godwin, in the later and fuller edition of 1615 of his *Catalogue of Bishops in England*, subsequently appearing under the title *De Præsulibus*, includes a brief account of the bishops of Exeter,‡ commencing with the old story of the synod, but very incorrectly both as to names and dates, giving Werstan to Sherburne and Cedulf to Crediton, stating them to have been both consecrated in 910.§ But he elsewhere says that Werstan was first placed at Tawton, and that he was soon after removed to Crediton; and but two pages further on says that he died at Tawton, and that Putta succeeded him, upon whose death, and not before, the see was removed to Crediton. Singularly enough, in another part of his book,|| Godwin places the early bishopric of Devon at North Tawton, which is quite another place.

Dr. Borlase, in his *Antiquities of Cornwall*, gives the same particulars as to Bishop’s Tawton and its bishopric, following, as he says, Godwin and others, on the authority of William of Malmesbury.

In Le Neve’s *Fasti Ecclesie Anglicane*¶ are lists of the bishops of Devon, in which he also describes the two first bishops, Werstan and Putta, as being fixed at Bishop’s Tawton before removing the see to Crediton. These last named authors no doubt derived much of their information on the points in question from Hooker, as likewise did

* Westcote, p. 130.

† Sir W. POLE, *Collections towards a Description of Devon*, p. 27.

‡ GODWIN, second edition, p. 359.

§ Ibid, p. 390.

|| Ibid, p. 452.

¶ Fol. 1716, quoted by Britton, p. 9.

Stevens in his edition of the *Monasticon*, Brown Willis in his *History of the Cathedrals*, Tanner's *Notitia*, Wharton, and others, all of whom have dealt with the subject, and adopted Hooker's statements thereon. But all these acute and critical writers appear to have raised no question whatever as to the historic accuracy of his account of the bishoprick of Tawton, the objection having been first put forth by Dr. Oliver in the present century.

Old Peter Heylin, in 1640, gives a *History of the Diocese*,* marshallling, as he calls it, the bishops. He is quoted by Prince, Polwhele, and others as an authority; but he differs from others in naming *Ædulphus* as the first bishop in 905, with Putta succeeding him in 906, and another *Ædulphus*, called the Second, in 924.

Prince's *Worthies*. In the life of Alfhred, Bishop of Crediton,† a full account is given by Prince of the earlier bishops in exactly the same words as used by Hooker, adopting his statements as to Werstan and Putta and Bishop's Tawton, but giving as his authorities Godwin and Heylin and others.

The authors of *Magna Britannia*, published in 1720, describe Tawton as a "place remarkable for being the first bishop's see in the Shire, and thence called Tawton Episcopo,"‡ and in a later part of the work, containing the Ecclesiastical Record of England, the full detail of the erection of the three new bishopricks and the appointment of Werstan and Putta to Tawton§ are given much in the same words as Prince, but with some additions, and a note bears testimony to the accuracy and truth of Hooker's history.

William Chapple of Exeter, who died in 1781, and who had been many years making collections for a revised edition of Risdon's *Survey*,|| which he did not live to finish, had before his decease completed the preliminary portion, which included, among other matters, a critical and original essay of some considerable length on the ecclesiastical government of the county, which was published in 1785. This was not a mere revision of Risdon, but as he describes it,¶ "What Risdon briefly said on the subject being very imperfect, I shall here endeavour to supply its defects, which cannot so well be done by way of additions to his, as by substituting in its room a more full and complete account of the

* Heylin, quoted by Polwhele, vol. ii. p. 45.

† PRINCE'S *Worthies of Devon*, p. 12.

‡ *Magna Britannia*, p. 491.

§ CHAPPLE'S *Review*. 4to. 1785.

¶ Ibid, 502.

¶ Ibid, 70.

several changes of the episcopal jurisdiction in these western parts."

This he does very fully, not only adopting and setting forth the Tawton bishoprick theory, but meeting and explaining the many contradictions in the early chronicles, parts of which I shall quote in the proper place.

Chapple wrote his treatise about 1770, and up to this time and for more than half a century later the claim of Tawton as the first bishoprick had not been called in question, but had been adopted in all general histories and topographical notices of the county.

Polwhele, who is certainly the most diffuse and laborious as in some respects the most philosophic historian of Devon, published his ponderous volumes in 1793–1797.* Some of the most interesting and valuable matter is contained in the numerous and extensive foot notes. Many notices of the bishops of Tawton are scattered through the volumes. In his chapter on religion in the Saxon period, he broadly states that the first bishoprick of the West Saxons was first seated at Tawton, which was also the first residence of the bishops, giving their names and the reasons for the removal of the see to Crediton after Putta's death, and he gives some instances of the name Putta having been perpetuated in the neighbourhood. Indeed, even now there is a manor called Puttsborough. Subsequently, referring to Tawton, he says: "Of this place we ought not to be silent, as the episcopal see was first fixed there; but, in my conception, it furnishes us with not a vestige of the bishop's palace, notwithstanding the opinions of some who pretend to point out to us a very respectable ruin." And in his history of the diocese he says: "The present see was composed of the two ancient sees of Devon and Cornwall (the former first erected at Tawton and afterwards at Crediton), was consolidated by Canute, and afterwards removed to Exeter by Edward the Confessor."†

In Dr. Oliver's *History of Exeter*, published in 1821, and in his *Historical Collections*, he for the first time questioned the generally received opinions that Tawton was the primary bishoprick of Devon, assuming Edulph to be the first bishop, and to have been fixed at Crediton in 910.‡ His *Ecclesiastical Antiquities of Devon*, published in 1842, contains an account of Bishop's Tawton, which commences: "Rejecting the assertions of Hoker, that the bishops of Devonshire had ever fixed their see at Bishop's Tawton, as entirely void of historic

* POLWHELE'S *Devon*, vol. i. p. 215.

† Vol. ii. p. 1.

‡ OLIVER'S *History of Exeter*, p. 13.

authority, we have still sufficient reason for believing that this manor of Bishop's Tawton, with its members Landkey and Swymbridge, formed a portion of the original endowment of the see first established at Crediton in 910, and was then regarded as the most profitable estate of the see. Here the bishops occasionally resided, as they did at Clyst, in Farringdon parish, at Radway, in Bishop's Teignton, at Place, in Chudleigh, and at Paignton.* Some small remains of their ancient palace are still visible on the south side of the cemetery. In it was a chapel, and we find in Bishop Stapleton's register that his Lordship, on 25th November, 1321, admitted eleven to the tonsureship "In Capellâ Curie sue de Tawton Epi."

Dr. Oliver gives us in this volume no further particulars, nor says how he arrived at his conclusions; but his opinion, given, as appears to me, without sufficient consideration and authority, has been so frequently adopted of late years as to have induced me to prepare this paper.

Britton, in his *History of Exeter Cathedral*, published in 1826,† is one of those who have adopted Oliver's opinion. He states that Aidulph, or Ædolphus, was the first bishop of Devon, in 909, and fixed his episcopal chair at Crediton; but he gives in a note the varying statements of Ralph de Diceto, Godwin, Le Neve, and Hooker, placing two earlier bishops at Tawton—Werstan and Putta; but adds, "These statements seem altogether unworthy of reliance."‡ And in the list of bishops he commences with Edulph, noting the claim of Werstan and Putta, but quotes Oliver's *History* as his only authority for rejecting them.

Messrs. Lysons, in their valuable and complete history of the county, which differs from all others in the fact of its being founded to a great extent on an examination and collation of the public records of the kingdom, and not entirely from mere local or personal authorities, or from servilely transcribing old histories or chronicles, are very brief and clear on the subject of Bishop's Tawton, suggesting no doubt whatever. "The manor was at a very early period given to the bishops of Devonshire, and was the original bishop's see. Putta, the second bishop, removed the see to Crediton. The bishops had a palace at Tawton many centuries after the see was removed: some ruins of it are still to be seen."§ It is unnecessary to prolong quotations

* *Ecclesiastical Antiquities of Devon*, vol. iii. Tawton.

† BRITTON'S *History and Antiquities of the Cathedral Church of Exeter* (1826), p. 9. ‡ *Ibid.*, p. 144. § LYSONS' *Magna Britannia—Devon*, vol. ii. p. 479.

from other Devonshire and ecclesiastical histories, chronologies, or cyclopædias, as they almost all concur in the general facts, most of them having, doubtless, copied from each other or from the recognized Devonshire histories, Dr. Oliver being, I believe, the first investigator who questioned the popular belief on the subject of the bishops of Tawton.

It will be seen that as regards the chorographical accounts there is a continuous and remarkable concurrence of statement in favour of the first see having been fixed at Tawton; but Dr. Oliver appears to rest his counter opinion merely on the fact of its not being so recorded in so many words in the early ecclesiastical or monkish chronicles, the name Tawton nowhere appearing in them, and the bishops of Tawton not being named as such in any existing charters, so far as is known. In answer to this it might be sufficient to point out, that none of those chronicles are contemporaneous, and that as they only assume to describe important or interesting transactions, and give no particular or sustained account of any special matters, it might well be, that in narrating ecclesiastical events in the west—of which Crediton was then generally known as the bishopric—such a small matter as that the two first bishops were fixed elsewhere was treated as immaterial, or passed over unnoticed, especially as they held their sees for such very brief periods. Possibly, also, Dr. Oliver rather referred to the doubts which have been raised on the entire history of the Plegmund synod, and not merely to the existence of Werstan and Putta; and it is not singular, that from the statements of the different writers being so confused and contradictory, with the names and chronology so faulty, some of their translators and commentators should have rejected the whole account as fabulous, or, as Dr. Oliver says, devoid of historic authority. I have referred to some of these objections when quoting William of Malmesbury and Ingulph; and so replete with anachronisms are some of these accounts as, according to Hardy, to leave the presumption of forgery without doubt. But in the face of the unanimity of so many writers of different ages and periods, including Polydore Vergil, in stating the general circumstances, it is difficult to assume a forgery. The very variations and discrepancies in their statements are rather proofs that they are not mere inventions; for, as Sir Henry Spelman observes, though there are apparently insuperable difficulties with regard to this transaction, yet "it is a certain fact."*

* *Cono. Ang.*, vol. ii. p. 200.

By referring to the quoted extracts, it will be seen that these variations and discrepancies are mainly:

A confusion in the date of the consecrations.

A confusion in the number of new bishops—five and seven.

A confusion as to the name of the first bishop of Devonshire, called Werstan by Matthew of Westminster and Roger of Wendover, Ædulph by others, and again Cedulf and Adolphus I., giving a second bishop of the same name to Crediton five years after.

The name Putta is given by two authors only, and then in connection with another diocese.

The time of consecration is differently referred to A.D. 905, 909, and 910. But if Ædulph of Crediton was really the first of the line of bishops, it must have been in 910, as it is well established that he continued bishop for twenty-two years, dying A.D. 932. Who then occupied the see of Devonshire for the intervening five years between the synod in 905 and the consecration of Ædulph in 910, unless the traditional Werstan and Putta?

But while some authors get rid of the serious chronological difficulties by rejecting the whole story, others have attempted to reconcile and explain them away. Among others, it has been suggested by Hutchins, in his *History of Sherborne*, that the most natural way to solve them is not to alter the date, "but to let 904 stand; and although the consecration could not then have taken place, probably the synod only came to a resolution to erect three new sees out of Sherborne, but could not dismember them during the lives of the then bishops, and so postponed the consecration of the new sees to 909, when these bishops died, and two other vacancies happened at the same time."*

But if we are to believe the circumstantial accounts of the pope threatening to excommunicate King Edward on account of his neglect in not appointing bishops to the vacant sees for seven years, it is not probable or credible that their consecration should have been delayed another five years, which it must have been unless the story of Werstan having been consecrated Bishop of Tawton in 905 is correct. But when Dr. Oliver so cursorily dismissed the claim of Bishop's Tawton as "entirely void of historic authority," he had probably forgotten that the matter had been fully investigated, and a means of removing many of the difficulties been suggested seventy years previously by Chapple, who wrote

* HUTCHINS' *Dorsetshire*, vol. ii. p. 221.

his observations, not with a view of supporting any theory as to Bishops Werstan and Putta, Tawton, or Crediton, nor to confirm the authority of Hooker's text, but entirely in the critical spirit of explaining the inconsistencies of the early chronicles and of Bishop Godwin's work, and of forming a correct list of the bishops of Devonshire; and he appears by his references to have most carefully examined all possible authorities on the subject. Chapple's notes are very voluminous, as they attempt to reconcile the discrepancies one by one. I therefore only quote such parts as bear directly on the question of the Tawton bishopric. After setting out the often-repeated story of the bishops in A.D. 905 and the synod, he goes on: "But the accounts we have of this transaction being somewhat confused, and not easily reconcilable with each other, I shall here set down what I at present take to be most consistent with truth and probability. It seems to me that Plegmund at this time (viz. in 905) consecrated only five bishops—Werstanus, or Werstan, for Devonshire, who had his see at Tawton, being a different person from Werstan, Bishop of Sherburne, consecrated five years after; Adelstan for Cornwall; Athelm for Somerset; and Asser for Sherburne; the fifth being Kedulph, or Cedulf, of Dorchester, whom Bishop Godwin seems to have mistaken for Eadulphus, or, as he calls him, Cedulf, the first Bishop of Crediton, who was not consecrated until five years after. But to return to Tawton. Werstan, the bishop there, dying in 906, was succeeded by Putta, who being slain by Uffa in 910, the see of Devonshire was removed from thence to Crediton, at which time, Winchester and Sherburne having also become vacant, and two more to be consecrated for Sussex and Wiltshire, that these vacancies might be supplied, Plegmund had again five bishops to consecrate; which number being the same as the former in 905, this, I imagine, might occasion the confused accounts we have of both consecrations, which are by most writers supposed to be one, so that different bishops of similar names have been confounded with each other and the sees to which they were appointed. From a due examination and comparison of facts, it seems apparent that the five bishops thus consecrated secondly in A.D. 910 were St. Frithstan for Winchester; Werstan (not the Bishop of Tawton, but the same that was slain by the Danes in 918) for Sherburne; Eadulphus for Devonshire, and his see now fixed at Crediton; and two others."* This note refers to the accounts given in the monkish chronicles; but Chapple also devotes

* CHAPPLE'S *Review*, 4to, 1785, p. 77.

considerable space to a comparison and elucidation of the conflicting statements of Bishop Godwin as to the dates and names of the bishops, from which I make some extracts: "That Werstan was the bishop consecrated for Sherburne in 905 is a mistake, this Werstan being then, as Bishop Godwin elsewhere tells us, from Hoker's catalogue, placed first at Tawton; and so far he is right. But to this he adds that he was soon after removed to Crediton, which contradicts what he himself more truly says of him, not two pages forward in his book, that he died at Tawton in 906, the year after his consecration, and that he had a successor in that see named Putta; upon whose death, and not before, the see was removed to Crediton. Bishop Godwin is no less mistaken in supposing Cedulf, as he calls him, appointed Bishop of Crediton in 905; for he elsewhere acknowledges that the see of Devonshire was at this time fixed at Tawton, it not being removed to Crediton till five years after, when Eadulph was appointed first bishop thereof. This Eadulph was probably the same person whom Godwin calls Cedulf, he perhaps finding him mentioned as the first Bishop of Crediton in the copy of some record as being consecrated by Plegmund; and the time of such consecration, by mistake, he fixed in anno 905, instead of 910. For he takes notice of but one public consecration of West Saxon bishops by this archbishop, though he must have had another in the year last mentioned, which Godwin or his authors seem to have confounded with the former."*

Chapple's argument proceeds to show most conclusively, by the dates of appointment and times of death of other bishops consecrated at the same time, that this double consecration—one to Tawton in 905, and the other to Crediton in 910—must have taken place, and is, as he says, the most probable solution of the difficulty with which the enquiry is entangled, and which had caused so many commentators to reject the story altogether, and this is apparently the difficulty which induced Dr. Oliver to declare the statements as to the bishops of Tawton to be devoid of historic authority.

Having disposed of the negative evidence, or rather, I should say, shown that the earlier writers do not negative the fact of a bishopric of Tawton having existed, it remains to deal with the positive evidence—the continuous series of authorities in its favour. Too much stress, however, cannot be laid on this uniformity of testimony, as the majority, if not all, of the authors quoted have undoubtedly copied or

* Chapple, pp. 77, 78.

based their accounts on each other, and may all be traced back originally to Hooker, who is the first writer we know of who gives the special details afterwards so generally adopted. In all other matters the authority of Hooker has always been unquestioned, and his accuracy and correctness of quotation has been abundantly testified to by such acute and critical authors as Le Neve, Tanner, Godwin, and others, who have freely made use of his authority, as have likewise Dr. Oliver and Britton, who generally accept his statements without question or comment. Hooker undoubtedly possessed most exceptional opportunities for consulting original documents relating to the see, which subsequently became scattered, and many of the more important ones removed to the Bodleian and elsewhere; and it can scarcely be suggested that a writer, whose accuracy has been admitted and proved beyond question in his general details, should have gratuitously invented and inserted an account of two bishops who never existed, adding special details, such as the murder of one of them, which would be calculated at once to challenge observation and comment if incorrect. Moreover, if these two bishops are rejected from the list, it entirely throws out the total number of bishops as given in the early calendars, though latterly some attempt has been made by Britton and others to restore the full number by inserting two names: John Carey, nominated in 1420, when absent in Italy, but who never took possession nor was consecrated, having died immediately after, if he was even not dead at the date of his appointment; the other, John Veysey, who having been deprived at the Reformation in 1551, was again restored in 1553, and who appears twice in the list.

I have here taken no account of immemorial local tradition, as any such would quite as probably originate from the unquestionable fact of Tawton having been not only an endowment and manorial appanage of the see of Devon from the commencement, but likewise a frequent place of residence of the bishops possessing a palace and chapel, long desecrated, the ruins of which remained until the last century. It however continued to be inhabited by them for several centuries after the removal of the see. Thomas Bear did homage to Bishop Brantyngham, "in aulâ de Tawton Epi," 21st of August, 1371, "et in eodem die et loco Thomas Hall fecit simile homagium." The same bishop held an ordination "in capelli manerii sui de Tawton Epi," on the 26th and 28th of May, 1390;* and William Hall did homage to Bishop Staf-

* *BISHOP'S Registers*, OLIVER'S *Antiquities*, vol. iii., p. 14; note.

ford, 4th of March, 1410, for lands, "Apud Beare infra Dominium de Tanton."

There are many other special features in the parish itself which tend to show an early ecclesiastical as well as manorial importance, some of the peculiar features of which still remain. The very extensive manorial rights were, for a considerable time after the removal to Crediton, kept in hand by the bishops, but became at a very early period severed and partitioned. So early as 1225, the church and rectory, with its dependencies Landkey and Swymbridge, and the ecclesiastical manor, were appropriated as an endowment to the deanery by Bishop Brewer, whence this portion of the manor has been since called the "Manor of Tawton Deane." Fisherton and Hall were alienated to laymen by Bishop Stapleton in 1314, and another manor, Accott, granted earlier, soon after the Conquest, to Drugo de Teignton. But the principal part of the manor, including the right of inflicting capital punishment, was alienated from the see by Bishop Veysey, who, in obedience to a royal requisition, conveyed it to the Russell family, who still retain it.

The rectory, including the residue of the ecclesiastical manor and the right of presentation to the two large adjoining parishes of Landkey and Swymbridge, and the great tithes of all such parts of those parishes as are within the manor, are still church property. The ecclesiastical duties of the mother church were always performed vicariously, and maintained by a grant of the small tithes, hence Tawton is designated a vicarage, and Swymbridge and Landkey, originally served by the bishop's chaplains, became perpetual curacies. The rectors—first the bishop and subsequently the dean—have from time immemorial granted the rectory to laymen, with its dependent chapels of Landkey and Swymbridge, on freehold leases for three lives,* receiving fines on each renewal. One such grant, dated 28th July, 1549, to Robert Chichester of Halle, is still in existence.

The grantee or lessee thus becomes rector and lord, and as such not only receives the tithes, but exercises all the manorial rights, appoints steward, reeve, and other officers, empannels and swears juries and homage, levies fines, and performs other antiquated manorial duties, besides the more important rights of ownership over the various estates belonging to the manor, which he exercises by making grants of the same for three lives by copy of court-roll according to custom. The effect is that the rector or lord farmer, as he is called,

* OLIVER'S *Antiquities*, vol. iii. p. 17.

whose own title may expire to-morrow, has power to sell and grant any lands in the manor for three further lives. This is a state of things still existing. The last lease was granted by the dean more than seventy years ago, but now hangs on one very old life, and until it drops the lord farmer continues to exercise his powers, and has lately granted several estates for three young lives. In earlier times the lord farmer also exercised to some extent spiritual jurisdiction by appointing the incumbents of the three parishes ; but in all leases for the last two centuries the dean reserved the rights of patronage and presentation. As the deanery lands have now fallen under the management of the Ecclesiastical Commissioners, this curious tenure will soon die out.

This division of manorial rights, and the conflicting claims of ecclesiastical and civil lords, very probably was the cause of a singular occurrence, noticed in Bishop Grandison's *Register*, 29th July, 1347.* It is entitled, "Processus contra invasores Manerii de Tawton." It sets forth that Theodore de Greneville,† "Juvenis Miles sive Thiro status militaris," on the Saturday after the late feast of St. Benedict, at the dawn of day, with Thomas de Merton, Richard Tyrel, John de Linscote, John Trengar, and a rabble composed of about 500 persons, proceeded with arms, offensive and defensive, to the manor of Tawton and to the glebe and vicarage house, and forcing premises belonging to the church, as also the houses of five tenants, there "varia bona ecclesiastica, sub-protectione ecclesiastica ibidem existentia ad valorem ducentarum marcarum et amplius, contra voluntatem dominorum, hujusmodi locorum et eorum qui hujusmodi custodiis fuerant deputati, consumere auferre et contrectare dampnabiliter presumpserunt." After severely beating, and even murdering some of the tenants and residents, these lawless invaders, decamped, hooting and shouting and terrifying all the neighbourhood. In consequence of such notorious outrage, Bishop Grandison directed the priors of Pilton and Barnstaple to proceed to the parish church, as also to the conventual church of Barnstaple, on the Sunday after the receipt of his mandate, and there at the solemn mass to publish the sentence of excommunication against the offenders, with the bells ringing, the cross erect, candles first lighted and then extinguished. Every priest assisting in stole and surplice, and to perform the like ceremonies in the neighbouring churches on Sundays and feasts until they received his injunctions to the contrary.

* GRANDISON'S *Register*, p. 139.

† OLIVER'S *Ecclesiastical Antiquities*, vol. iii. p. 14.

The whole of the proceeding was to be explained to the people in the vulgar tongue, and a certified return was to be forwarded to his lordship by the feast of St. Bartholomew.

The church gained the victory, as it appears that on the 14th January following, Sir Theobald Greneville, on his bended knees, made due submission to the bishop in the presence of his sureties, John de Ralegh and John de Dinham, Knights, and of Almaric Fitzwaryn, Sheriff of Devon, and obtained the benefit of absolution.

One other peculiarity of this district is worthy of notice, as it probably had its origin or some connection with the early bishoprick of Tawton.

A small hamlet on the outskirts of the parish, just where it adjoined Barnstaple, anciently attained the dignity of a borough, governed by a mayor, and possessing certain franchises. In 1294 King Edward granted it a market, together with a fair for three days on the festival of St. John the Baptist. There is no record as to when it first became a chartered borough. Dr. Oliver thinks not until the thirteenth century;* but it may have been earlier, and probably a consequence of the ecclesiastical supremacy of the bishops of Tawton, who sought to establish in their district a temporal or municipal jurisdiction in rivalry with the neighbouring burgh of Barnstaple, which had possessed important privileges as such from the time of Athelstan, who is also reputed to have possessed a palace at Umberleigh, very near Tawton. It appears to have been called the borough of Nyweport, which afterwards became Newport Episcopi. The records of the Guild of Cordwainers at Barnstaple, which have recently been investigated and kindly communicated by Mr. Wainwright, head-master of the Grammar School, supply several instances of this name. Two of the ancient deeds are witnessed by mayors of the place; viz., Robert Fouke, who subscribes as Maiore de Nyweport to a deed of 18th Edward III., and Michael de la Pille, Maiore de Nyweport, to a deed 7th Edward III. (A.D. 1334.) A feoffment deed dated 1st Henry V. grants "Unam peciam terræ et prati in Newport Epi," and another, dated 8th Henry V., grants "terras in Lychewyton et in Newport Epi." The name is repeated, with more or less variation in spelling, down to the reign of Queen Elizabeth, when it is Anglicized "Newport Bishop." The "borough of Newport" is set down in Bishop Stapleton's registers as paying £16 8s. 10d. rent or oblations in 1307; and its chapel of St. John the Baptist is frequently mentioned

* OLIVER'S *Ecclesiastical Antiquities*, vol. iii. p. 16.

in the registers, and there are several records of wills having been proved within it. The appellation borough of Newport has subsisted to a recent period; but there is no record of any municipal privileges or institutions having been enjoyed for generations, except the formal election of mayors, of which it kept up a semblance until the last century, when it became a mere form, and has long ceased. The names of several mayors of an early period, including one Thomas Perrott in 1437, have been recorded. Several of them were members of the Fowke family, who appear to have been persons of note, living for many generations at Pille, an ancient manor-house adjoining the river, now belonging to the Chichesters, and which had been alienated from the see of Tawton at an early period. It is recorded in the bishops' register that Bishop Stafford licensed a chapel at Pill, for the use of the Fowkes, in 1400; but it was "ruinated" in Risdon's time.

By the Municipal Reform Act this little territory became absorbed in the borough of Barnstaple, and it is now merely a suburb of the town, called Newport. It has also latterly become a separate ecclesiastical district, though still within the parish of Bishop's Tawton for other purposes.

MEMORANDA.

EDITED BY W. PENGELLY, F.R.S., F.G.S., ETC.

PART I.

(Read at Torrington, July, 1875.)

[*IN his "Archæological Memoranda,"† read last year, Mr. Heineken suggested "that a few pages of our *Transactions* might, with advantage, be annually devoted to the reception of "Waifs" and "Strays" connected with Devonshire; and the members who attended our Teignmouth meeting remember, no doubt, that the suggestion met a cordial reception, and that I was asked to edit and bring to the present meeting such notes and newspaper cuttings as Mr. Heineken contemplated, and which might be sent to me by the members during the ensuing twelve months. I readily undertook the office, but have to report that it has given me almost nothing to do, for since our last meeting I have received communications on the subject from Mr. Heineken and Mr. Pycroft only.

The suggestion, however, appears to be too good to be allowed to die through mere neglect, and in order to prevent this I would suggest that the Council should annually appoint a Committee of members, representing at least the greater divisions of the county, for the purpose of noting the discovery or occurrence of such facts in any department of scientific enquiry, and connected with Devonshire, as it may be desirable to place on permanent record, but may not be of sufficient importance in themselves to form the subjects of separate papers. The notes should be sent, without unnecessary delay, to the Secretary of the Committee, who should edit and bring them to the next annual meeting of the Association.

I would further suggest that the fact of the appointment of such a Committee, and, indeed, of all Committees, should

[* See *Trans. Devon Assoc.*, vol. vi. p. 774, 1874.]

[† Everything within brackets is editorial.]

be recorded in our *Transactions* after the manner of the British Association, and that the record should be placed immediately before the President's Address.

I venture to hope that though the "Waifs" and "Strays" secured for the present meeting are by no means numerous, they will not be found wanting in interest. The first nine of them have been communicated by Mr. Heineken, and are *memoranda* of "finds" made at Sidmouth since June, 1874, and the tenth and eleventh are from Mr. Pycroft.]

I. ARCHÆOLOGICAL.

1. Sundry flint discs, scrapers, &c., have been found by Miss Ede, Mr. Ede, jun., and Mr. P. O. Hutchinson, in July, 1874, and onwards. N. S. H.

2. Roman coin. Large brass of Commodus, found in clay deposit on the sands, in which are the remains of ancient trees and teeth of mammoth. The inscription is T.R.-P.O. VIII IMP. VI COS IIII P.P. The emperor in a quadriga to right. September 14th, 1874. N. S. H.

3. A shilling of Elizabeth, found in what is locally called the "black sand" on the beach; viz., disintegrated bog iron ore. September 22nd, 1874. N. S. H.

4. Broken sling-stone in tumulus (*disturbed*) on Salcombe Hill. Mr. P. O. Hutchinson. September 22nd, 1874. N. S. H.

5. Roman coin. 2d. brass. Obverse and reverse quite obliterated. Found in the clay deposit on the beach. October 26th, 1874. N. S. H.

6. A shilling of Elizabeth or Edward. Much corroded. Found on the sands. October 29th, 1874. N. S. H.

7. Roman coin. 2d. brass (?) Very much obliterated. Found in the clay deposit. October 30th, 1874. The three Roman coins were found by the same person, Fred. Bartlett, and opposite Fort Cottage. N. S. H.

8. A halfpenny, in good preservation, "Gulielmus Tertius, 1697." Found when digging a drain in "Ebdon's Court," at the depth of about three feet. August or September, 1874. N. S. H.

9. A guinea, in very excellent preservation, of Anne. Date 1714, the last year of her reign. Found by a man when ploughing a field on Peak Hill, the property of J. B. Lousada, Esq. November 26th, 1874. N. S. H.

10. *Exminster Castle*.—In the village of Exminster there existed in the olden time a castle, Exminster Castle, not yet forgotten by the antiquary. Leland mentions it as an embattled house in his *Itinerary*. William Courtenay, Arch-

bishop of Canterbury A.D. 1381–1396, was born there. Some fifty years ago an archway leading to the entrance of the castle remained; it has long since been pulled down, and with it the last memorial of the old building. About six years ago the ground on which it stood was purchased by the late Mr. Carpenter, of Gatehouse, Dawlish; and on digging up the soil, the foundations of the castle were brought to light, with the wide stone steps leading to the entrance. The stones were used in building the new wall by the roadside; and now, beyond these few lines, there is nothing to mark the spot where the old castle was. It stood on the left-hand side of the main road as you pass through Exminster from Exeter, and exactly opposite Pottles Lane. G. P.

11. *Exminster Monastery*:—The vicarage house stands on the site of the old monastery; and till within the last ten years a Gothic arch, the last remains of the ecclesiastic building, stood in the vicarage garden. It has been removed; and although some of the old masonry can still be traced in the walls, there is little beyond this record to point out where the monastery which gave its name to Exminster stood. There is, however, an old building at the rear of the vicarage which is believed to have been the granary of the monks. G. P.

12. About Christmas, 1874, the workmen engaged at the Zitherixon Clay Works of Messrs. Watts, Blake, Bearne, & Co., in the parish of Teigngrace, between Newton Abbot and the village of Kingsteignton, on the left bank of the Teign and about 20 yards from that river, found the fine bronze spear-head which, through the kindness of Mr. Watts and his partners, to whom I am indebted for the facts in these memoranda, I have the pleasure of exhibiting to the meeting, and which is represented by fig. 1 in the accompanying plate on the scale of $\cdot 425$ linear, or four inches and a quarter to ten inches. It lay about 20 feet below the surface of the ground, and from 12 to 15 feet below the general level of the surface of the adjacent river, in black mud, near the base of that accumulation of angular, sub-angular, and rounded stones, mixed with clay and sand, locally known as the "Head," and about 3 feet above the deposit of clay for which the district is so famous. The implement measures 10·95 inches in extreme length, 1·8 inch in greatest breadth, and 1 inch in diameter at the end prepared for the shaft or staff. When it was discovered, a portion of the wooden staff, but very much decayed, occupied the socket prepared for it and projected about 2 inches. This staff appears to have been held in its place by a nail or pin passing through a hole in the socket.

Its edges are somewhat jagged here and there, and it weighs 7·8 ounces avoirdupois. W. P.

13. The discovery of an object of interest in the "Head" is by no means an unprecedented event. About 8 or 9 years since, a strange and by no means beautiful work of art in the form of a human figure, or what was no doubt intended as such, carved in oak, was met with in the parish of Kingsteignton, also on the left bank of the Teign, and about the distance of that vague unit of length, a "gun-shot," from the spot at which the spear-head was found. It was 25 feet below the surface, lying, in an inclined position, against the buried trunk of a prostrated oak tree, 3 feet in diameter. The proportions of the various parts of the figure are not those of the human subject, at least as it exists in the present day. The entire figure is 13·3 inches long, of which the head, from crown to chin, is 2·7 inches or 20 per cent., the neck 2·2 inches or 17 per cent. nearly, the trunk 5·2 inches or 39 per cent., and the legs 3·2 inches or 24 per cent., that is but little longer than the head. The shoulders are well developed, but there is no indication of arms having been attached or articulated to them. Just above the shoulders, however, and in a line parallel to that joining them, a cylindrical hole, about ·3 inch in diameter, passes quite through the neck. Possibly arms may have been attached to the ends of a pin which occupied this perforation. There are no feet properly so called, but the legs terminate in hoof-like knobs. The weight of this figure, or doll, or idol—for all these names have been given it—is 11·75 ounces. Messrs. Watts and Co. have been so good as to entrust to me this specimen also. It is represented by fig. 2 in the accompanying plate, on the same scale as the spear-head. W. P.

14. A few potsherds, the finest of which I have also the pleasure of exhibiting, and of representing in fig. 3, were found at the same time as, and almost in contact with, the wooden figure. They are of coarse clay or silt, which contains numerous small scales of mica.

Prostrate oak trees occur somewhat frequently in the "Head," and some examples have been met with containing 100 cubic feet of timber. The wood is generally well preserved, and has been made into walking sticks and other objects.

Bones of various animals are also found from time to time, including those of Ox, Deer, and Dog. W. P.

15. On March 26th, 1875, Mr. H. F. Barnard, nephew of Mr. H. B. Woodward, F.G.S., of the Geological Survey of

FIG. 2.

FIG. 1.

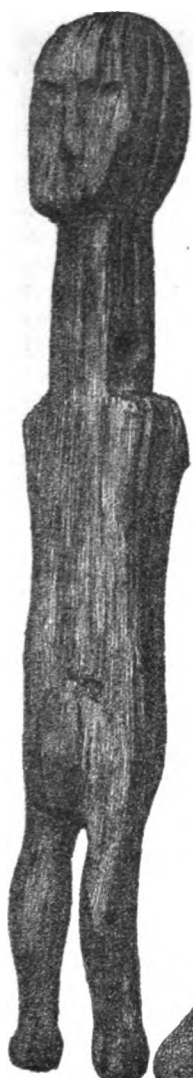
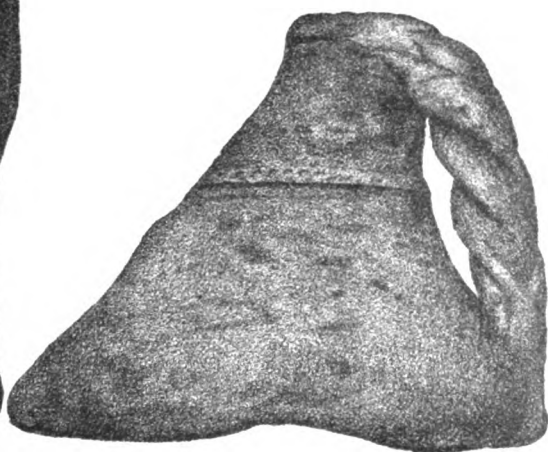
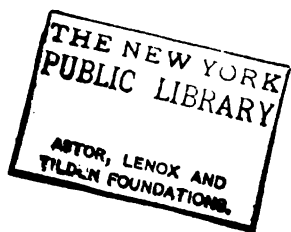


FIG. 3.





England, now residing at Newton Abbot, found an implement made of greenstone, in the bed of the river Lemon, in Bradley Vale, near Newton. Mr. Woodward has kindly entrusted me with the implement for exhibition at the present meeting. It is 8·6 inches long, 2·6 inches in greatest breadth, which it attains at about 1·5 inch from one end. From this point it tapers almost regularly to the other end, which is but 1·2 inch broad and has a tendency to squareness with the angles rounded off, whilst the other end is curved. The opposite sides are almost, but not quite, perfectly symmetrical. It is ·8 inch thick at the narrow end, and tapers thence to the opposite extremity.

Mr. Woodward found a second stone at the same spot on the 24th of July, 1875. This, which he has also placed in my hands, is 3·8 in. long, 1·8 inch in greatest breadth, and 7·5 in greatest thickness. It is almost a parallelogram in form, but somewhat rounded at one end and nearly square at the other, which is bevelled off to a chisel-edge. The stone is schistose in structure, and is probably a volcanic ash, such as is prevalent about Newton. I venture on no opinion as to whether this specimen has really been fashioned or used by man, but its chisel-edge appears to entitle it to this cautious notice. W. P.

II. METEORIC.

16. [The following memorandum was cut from the *Western Morning News* of Thursday, September 3rd, 1874]:—

*"A Brilliant Meteor:—*About nine o'clock on Tuesday night" [1st September, 1874] "persons in North Devon saw a brilliant meteor shoot across the sky from west to east, between the zenith and the pole-star, leaving behind it a broad, straight bar of light of greater brilliancy than the moon. This bright bar of light remained for some minutes, and then, changing to a serpentine form, gradually died out. Many 'shooting stars' were seen during the night, and altogether the sky had a somewhat singular appearance."

17. [The following is a cutting from the *Western Times* of June 7th, 1874]:—

*"Circle round the Sun:—*Sir,—On Saturday my attention was called to a remarkable appearance in the sky, in the form of a large halo round the sun, beautifully coloured as a rainbow. When I first saw this it was about 1.20 p.m.; and I think it lasted about twenty minutes. In size I think it was about as large as that of the largest halo round the

moon I have ever seen. The sky at the time was tolerably clear, though there were a few fleecy clouds at some distance from the sun. The northern part of the circle had stronger colours than the southern part.

"Perhaps some of your older readers would be able to say whether they have ever seen a similar phenomenon. I believe it to be rare in this country; but Beeton, in his *Dictionary of Universal Information*, says: 'This appearance round the heavenly bodies is said to be frequent in Russia and North America.' There, it is said, halos appear sometimes in concentric circles; this on Saturday had one circle only.

"I am, yours,

J. H.

"St. Leonards, Exeter."

[Mr. W. Vicary, F.G.S., of Exeter, informs me that he and J. H., the writer of the foregoing letter, observed the phenomenon together.]

III. OCEANIC.

18. [The following communication from some anonymous writer at Sidmouth appeared in the *Western Times* newspaper of 5th October, 1874]:—

"*Equinoctial Wave*.—On Friday night a huge wave rose just as the sea was in its calmest mood, and suddenly broke over the Esplanade, washing out an iron machine, and thus preventing the loading of a vessel. The visitor was so unexpected, and none of the kind having been remembered since the tidal wave of five years ago, the people were alarmed at first; and their fears increased as the sea, which had previously been smooth, became exceedingly rough. This continued several hours, when the storm passed off."

[This is worth preservation, not only as a probably correct enough description of a remarkable agitation of the sea, but as a good illustration of the utter confusion prevalent amongst unscientific persons respecting *waves* in general, as well as *tidal waves* and *equinoctial tides*. I have no recollection of having previously met with the name an "Equinoctial Wave."]

[The following abbreviations have been used in these "Memoranda:." N. S. H., Mr. Heineken's initials; G. P., Mr. Pycroft's initials; and W. P., the Editor's initials.]

THE POPULATION OF SIDMOUTH FROM 1260 TO THE PRESENT TIME.

BY P. O. HUTCHINSON.

(Read at Torrington, July, 1875.)

THE official census, or numbering of the people of this country, was only first taken at the commencement of the present century. We have therefore no means of knowing what may have been the amount of the inhabitants of any particular town or parish prior to that date, except by some fortuitous accident. The *Cartulary*, or account book, or memorandum book, of the former priory of the adjoining parish of Otterton, contains a list of the residents of Sidmouth as they existed more than six centuries ago; and from the data there given a very fair approximation of the number may be obtained. When Henry VIII. suppressed the religious houses, and sold the manor of Otterton to Mr. Duke, this interesting old book fell into the hands of that gentleman; and it continued in that of his descendants until about a century ago, when one of the Miss Dukes, co-heiresses, married Taylor, whose daughter married Coleridge of Ottery, through which channel it came into the possession of the latter family. By members of that family, for historical purposes, it has been lent to me on two or three occasions; and I have gathered from it much valuable matter referring to the parish of Sidmouth. Towards the end of the preamble, or preface, the monk Gaufridus, who avows himself to be the writer, has entered the letters M.CC.LX.; and this date 1260 constitutes one of the happiest entries in the book. Transcribed into it are copies of original charters and conveyances of land; notes of transactions between the monks and their tenants in the parish of Sidmouth; and a list of the names of their tenants, embracing apparently nearly all the resident population, together with the rents that they had to pay and

the services they had to perform. These rents and services, though highly interesting, I must here omit for brevity's sake, and confine myself only to the object which I have in view. This object would be attained by taking the bare number of the tenants; but I think that value will be added to the list if I give the names themselves. We have here a sort of Sidmouth directory for the year 1260, containing a body of varied information that could not now be found in any other place. As the parchment to which they have been committed has deepened to a brown, and as the ink with which they were written has faded also to a brown, the two browns are in some places so much alike that the characters are not always very obvious; and as the Latin is full of the abbreviations common to that period, some uncertainty, when now writing the words extended, will naturally present itself in dealing with proper names. By giving the names themselves, the curious reader may institute a comparison between those that were heard in the valley of the Sid 615 years ago and those that are found there in the present day. The change indeed has been whole and complete, with the exception of a few in the ancient list which have some resemblance to certain modern ones now in the place. The list is as follows:

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| 1. Adam de Radweie.
[Now spelt Radway.] | 23. Radulphus, son of Walter. |
| 2. Robert de Ascertone.
[Now Asherton.] | 24. William Huytte. |
| 3. Robert Genever. | 25. Gonnill. |
| 4. Nicholas Hardi. | 26. Robert Bogemore. |
| 5. Boestart. | 27. Andreas de Bekewalle.
[Now Bickwell.] |
| 6. Adam de Molendino.
[Of the Mill.] | 28. William Cole. |
| 7. Nicholas de Ascertone, and Margaret his wife. | 29. Eddoart de Boluortone.
[Now written Bulverton.] |
| 8. Tholomew. | 30. Richard de Boluortone. |
| 9. Robert de Cottemetone.
[Now written Cotmaton.] | 30. William de Boluortone. |
| 10. William Wise. | 31. Thomas. |
| 11. Katerina de Peke.
[Perhaps of Peak Hill.] | 32. William. |
| 12. Todewine. | 33. Richard Ladde. |
| 13. Walter Scade. | 34. Vimont. |
| 14. Richard Medicus. [The Doctor.] | 35. Robertus Codde, or Todde. |
| 15. Robert Yeebel. | 36. Thefania. |
| 16. Gervasius, son of Tholomew of Otterton. | 37. Henry de Hylloseia. |
| 17. Christopher Herding. | 38. Mariotta. |
| 18. William Herding. | 39. Donol. |
| 19. Jordan de Ascertone. | 40. Thomas Suette. |
| 20. William de la Knolle. | 41. Christopher. |
| 21. Henry de Cottemetone. | 42. Philip Forester. |
| 22. Kinstewine. | 43. Walter Coea, or Tosa. |
| | 44. Philip Larcher. |
| | 45. Robertus Bro'.
[Word abbreviated.] |
| | 46. Richard Herdint. |
| | 47. Jordan Cole. |

48. Sibella.
49. Richard Bers.
[In another place, Le Bers.]
50. Salemey.
51. Meles.
52. Hal.
53. Jordanus Fridel.
54. Walter Croch.
55. Eddoart Larcher.
56. Walter Calli. [Calley or Cawley are still here.]
57. Roger Cocela, or Totele.
58. Robert Mantel.
59. John Chaunterel.
60. John Syage.
61. William Opehille.
62. Semer Mattok.
63. Ysabel Rufa.
[Had she red hair?]
64. Mariota Cole.
65. Wonequin Lodde.
66. Walter Blouer.
67. Goddwell.
68. Eddoart Pistor.
[Edward the Fisherman.]
69. Gervasius Forboor.
[Faber till recently here.]
70. Robert Longus, or Long.
71. Roger Goddoll.
72. Relicta Fik. [The widow Fik.]
73. Martille, or Martillus, Turbot.
74. John Segere.
75. Willielmus Goddinam, or Goddman. [Abbreviated.]
76. Richard Tureward.
77. Radulphus Dodemair.
78. John Lyreis.
79. William Spede.
80. Wonequin de Eterura (?)
[Abbreviated and uncertain.]
81. Ricardus de Monasterio.
[Richard of the Monastery.]
82. Seman Dare.
[Dare is still a name here.]
83. Rogerus Bekewelle.
84. Pleasante.
[And furtheron, Pleissante.]
85. John Passemer.
[The name Passmore is here.]
86. Walter Chaunterel.
87. John Wygan.
88. Thomas Magister.
89. Adam Loois.
90. Roger de Blakemolde.
91. Eddoart Pope.
92. Semer Baldewyn.
93. Walter de Fesewatere.
94. Robert Leros.
95. Alicia, daughter of Blonere.
96. Albede.
97. Walter Clet.
98. Adam Cole de la Herne.
99. Thomas Longus.
100. Willielmus Beage.
101. Gonnill Opehille.
102. Gonnill de Porta.
[Gonnill the Doorkeeper.]
103. William Colsta.
104. Jordan Traci.
105. Wonequin Frodde.
106. Radulph Hake. [Name still in the neighbourhood.]
107. Jordan Bures.
108. Robert Boys.
109. Alicia Poole.
110. Susanna.
111. Jordan Carpentarius.
[Jordan the Carpenter.]
112. Jordan Blouer.
113. Eddoart Fairlont.
114. Johannes Ybermene.
115. Nicholas de Ecclesia.
[Nicholas of the Church.]
116. Thomas de Molendino.
[Thomas of the Mill.]
117. Richard Renile.
118. William Bomore. [Probably of Boomer, or Boughmore.]
119. Nicholas Ball.
120. Kinstawine Suete.
121. Thomas, his brother.
122. Willielmus filius Vicarii.
[The clergy married in that day apparently.]
123. Adam Pistor.
124. Robert Pore.
125. Cole Beage.
126. Helyot Tarente.
127. Cole.
128. Henry de Ascertone.
129. John Franceis.
130. Robert Mercator.
[The Merchant.]
131. Roger Clappe. [A common name in Sidmouth still.]
132. John Prot.
133. Margerie Costinere, or Tostinere.
134. Lucia Hoper.
135. A. Chonterel.
136. Robert Boys.
[Another, at a different rent.]
137. Eddoart Pordeu.
138. Thomas Beufiz.
139. Roger Sinkere.
140. Robert Abet.
141. Relicta Goddolle. [Left or abandoned—a widow.]
142. Cole Comer.
143. Robert Torneham.
144. Jordan le Hoper.

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| 145. Symon Hoper. | 153. Adam Haka, or Hake. |
| 146. Eddoart Ball, Pistor. | [Still in the neighbourhood.] |
| 147. Robert Champe. | 154. David de Ballebrige. |
| 148. Robert de Heccawille. [Perhaps
for Beccawille, or Bickwell.] | 155. Philip Symon de Ballebrige. |
| 149. Walter Wakeman. | 156. Dic's ficta. |
| [A name here till recently.] | [Words of doubtful reading.] |
| 150. Edward de Ffenta. | 157. Willielmus Jacob. |
| [Edward of the Mountain.] | 158. Willielmus de la Berge. |
| 151. William de la Dreffe. | 159. Gervasius, son of Robert Yaebe. |
| 152. Dominus Guerelet. | 160. Jordan de Toddewelle. |
| | [Now Tidwell.] |

Of the above list of 160 persons, thirteen are women who stand alone as tenants. Some of them may have been widows with families. Two of them were certainly widows; namely, Relicta Fik and Relicta Goddoli; but of the rest we have no explanation. Subtracting the women, there remain 147 men, who we venture to assume were all, or nearly all, the heads of families. Twice 147 are 294, which is giving to every man a wife. This doubtless is too much; but we will strike off odd numbers at the end of the calculation. If we give to the 147 married couples three children each, the number of children would be 441; which, added to the 294 fathers and mothers, would amount to 735. Then, of the thirteen women, we will suppose that six of them were widows with three children each; and that will be six mothers and eighteen children, or twenty-four individuals, which, added to the 735, give 759; and finally, the seven single women bring the gross amount up to 766. But this is not all. There were doubtless residing in the parish a few ecclesiastics and a few official persons, who were not tenants, and who are not down in the list. If we take these at fourteen, and add them to the 766 above, we shall have a grand total of 780. I am persuaded, however, that this is a great deal too much. In the first place, we have no information as to how many of them were heads of families; and I doubt not I have married far too many. And if there are too many husbands, there are also too many wives. Perhaps, likewise, the average of children is too high. Suppose we strike off five per cent. of the married couples, making the married men 140, instead of 147, and the children two to each couple, instead of three. The formula would then stand thus: Married men, 140; wives, 140—together, 280; their children, 280—together, 560; six widows and their twelve children, eighteen—making 578; seven single men (the five per cent. struck off), and the seven women as before, are fourteen—in all, 592; and lastly, the fourteen, or any other number of ecclesiastics and official persons—and the

great sum total is 606; say 600. I think this will satisfy all considerations better than the first calculation. Even this, however, I sometimes feel might be accounted a liberal estimate; but as it is a round number (towards which my proclivities lean, having a dislike to fragments or odds and ends), we will let it stand for the present.

In 1801, when the first census was taken, the population was returned at 1,252. We are thus furnished with two fixed points—the number of the people in 1260, or thereabout, which we take at 600, and that in 1801, when it was 1,252. From these we may deduce approximately what it is likely to have been from century to century, or from decade to decade, assuming that there was a sort of regular geometrical progression, which nevertheless is not likely to have been the case. It will be found that the inhabitants increased at the average rate of 121 in a century, or at twelve and a fraction every ten years. Thus the whole march and progress of the population of Sidmouth from 1260 to the present time will stand as in the following table:

1260 ... 600	1470 ... 854	1680 ... 1107
1270 ... 612	1480 ... 866	1690 ... 1119
1280 ... 624	1490 ... 878	1700 ... 1131
1290 ... 636	1500 ... 890	1710 ... 1143
1300 ... 648	1510 ... 902	1720 ... 1155
1310 ... 660	1520 ... 914	1730 ... 1168
1320 ... 672	1530 ... 926	1740 ... 1180
1330 ... 684	1540 ... 938	1750 ... 1192
1340 ... 696	1550 ... 950	1760 ... 1204
1350 ... 709	1560 ... 962	1770 ... 1216
1360 ... 721	1570 ... 974	1780 ... 1228
1370 ... 733	1580 ... 986	1790 ... 1240
1380 ... 745	1590 ... 998	1801 ... 1252
1390 ... 757	1600 ... 1010	1811 ... 1688
1400 ... 769	1610 ... 1022	1821 ... 2747
1410 ... 781	1620 ... 1035	1831 ... 3126
1420 ... 793	1630 ... 1047	1841 ... 3309
1430 ... 805	1640 ... 1059	1851 ... 3421
1440 ... 817	1650 ... 1071	1861 ... 3351
1450 ... 829	1660 ... 1083	1871 ... 3370
1460 ... 841	1670 ... 1095	

It would not do to omit drawing the reader's attention to the remarkable fact, that instead of a uniform or uninterrupted progression, the population lost seventy from 1851 to 1861. This is the only check in the onward march that we know of; but of course we cannot tell what may have occurred prior to 1801. Bad farming, civil wars, improvidence, famine, and pestilence, some of which were rarely

absent during "the dark ages," may have worked great havoc that has passed silently into oblivion. What was the cause of this irregularity? Here we have a question that very naturally offers itself for consideration. To those who have lived long in Sidmouth, and have watched the course of events, or the laws of cause and effect, or the influence of circumstances in the neighbourhood, a solution is not difficult. Let no one be surprised when I say that it was not the building of Tenterden steeple, a few miles to the east, but the opening of the South Devon Railway, about that time, a few miles to the west, below Exeter. Certain it is that from 1851, when the line had been recently opened, the decrease became manifest, and especially among the males. The men, in short, went away to seek work, leaving the women behind them, where new fields of industry had been created; and the visitors and summer tourists proceeded to watering-places on the coast, then made more accessible by the rail. The tide of population was allured into another channel. The number in 1851, as shown in the table, was 3,421; and in 1861 it was 3,351, the difference being seventy. And not only does this loss of seventy in the decade speak to the then decaying prosperity of the town, but the same thing is further proved by the preponderance in the amount of females over males, a condition always looked upon as unfavourable. Of the 3,351, the males were 1,383, and the females 1,968, a difference of 585, or one-sixth more females than males. This is held to indicate that trade was dull in the parish, and that the men, not able to support their wives and families on what they could earn at home, were obliged to leave them, and seek employment elsewhere. By 1871, however, a reaction had set in, so that the tide had slightly turned, and the amount was 3,370, or a gain of nineteen; but even after this gain the number in 1871 was fifty-one less than it had been twenty years before. But Sidmouth has seen its worst, and it is now steadily on the rise. The opening of the branch rail in July, 1874, has infused new life into the place. Visitors are arriving; trade is increasing; money is not so scarce; the value of property is improving; buildings are being erected; more banns are being called in church; and perambulators are in request.

THE ECONOMIC GEOLOGY OF DEVON.

BY R. N. WORTH, F.G.S., ETC.

(Read at Torrington, July, 1875.)

THE fact will be admitted by all, though we may differ as to the degree of influence, that man is largely a creature of circumstances. By no set of material circumstances is he so influenced as by the geological conditions of the country in which he lives. The land shapes the people; its physical features mould their history. Our wealth, our enterprise, our skill, our character, spring from or are directed by our surroundings. Men vary in the use of their materials; some get a good return from that which is of little value, others starve in the midst of riches which they are too idle or too ignorant to realise; but the average man and the average nation are very much what the conditions of their existence make them.

To geological causes the world owes its configuration: its mountains and its plains; its rivers, lakes, and seas; its barren rocks and its fertile soils; the mineral wealth of certain strata, and the poverty of others. These things have ruled and do rule the destiny of man. Political divisions follow the lines of nature. Mountains have preserved freedom; coasts given birth to commerce; great rivers become the parents of busy cities. The volcano and the earthquake of the past have leagued with the more equably acting forces of Nature, to carve out the harbours from whose convenience our myriad-masted seaports have sprung. Men are sailors, or miners, or farmers, or factory hands, mainly because the physical conditions of the districts in which they live will it so, and make individual preference take the colour of overruling necessity. At the bidding of geological discovery the tide of population ebbs and flows. An English coal-field turns villages into workshop towns echoing with the din of manufacture. A mineral spring creates a centre of fashionable

life. Sands and cliffs, which sea, rain, and air have been forming and beautifying for ages, have their solitudes peopled with colonies of health-seekers. Diamond and gold fields change the currents of national life, and draw together the veriest medleys of races. Oil wells match a shoddy with a petroleum aristocracy. There is not a phase of human existence which geological conditions do not in some way influence. Hence there is a good deal more in geology than the theory and speculation to which many well-meaning, but not well-informed, people appear to consider its domain confined.

There is special interest for us in the geology of Devon. We are what we are, in race, character, calling, and social position, mainly because of the geological peculiarities of this western land. The proof is easy. Our tin mines brought the pioneers of civilisation earlier to these shores than to any other part of the kingdom. In the fastnesses of our moors and our hills the struggle for liberty was continued by Britons and Saxons when in more open districts the strife had long been over. Our extended coast line, broken by frequent harbours, gave birth to that spirit of adventure and enterprise which made Devon the foremost county in the land in the days of Elizabethan glory, and which has never failed us since. There, too, was commerce encouraged, and by commerce manufacture. Our buried riches, mild climate, and fertile soil, created and fostered mining and agriculture among us, and made them act and re-act upon each other. Still do our rugged uplands, with their rough roads and their sparse population, retain practices, and preserve old beliefs and superstitions, that have died out in less remote and more cultivated neighbourhoods. Thus the Devonshire man in his place, like the Englishman in his, like the inhabitants of other countries in theirs, is in no remote degree the product of the soil on which he lives. There is a deeper meaning in the words 'fatherland' and 'mother-country' than we are apt to imagine.

I do not intend, however, in this paper to discuss such questions of cause and effect. I wish simply to record the present economic relations of the geology of Devon, which are very wide and very important, dealing mainly with the mineral wealth of the county. We are far from recognising the extent of that wealth. In the days, not yet so distant as to be beyond living memory, when pack-horses were the sole means of traffic in our central districts, little advance could be made in its development. Good roads, rapid

and cheap locomotion, are the essentials of such progress. Our roads have for years been improving. Our canals were never very important—we have too many hills to permit the formation of an extended system of water-carriage—and have been elbowed out by the railways. The natural difficulties of the county have retarded the progress of the iron road; and there are yet large areas deficient in railway accommodation. The same geological causes that formed our mineral lodes, shaped in conjunction with others our hills and valleys; creating wealth on the one hand, increasing the difficulties of its attainment on the other. In railway extension, as in so many other matters, progress is attained only by conquering Nature for the object she supplies with the means she gives.

Cornwall excepted, no county in England presents a more varied field of economic geology than Devon. My object is to indicate the vast utilitarian debt we owe to the geological conditions of our county; possibly to forecast its increase. My materials are drawn from many sources, in addition to personal investigation; but I must specially express my sense of the value of that part of Sir Henry De la Beche's report on our western geology, which deals with this question. At the time he wrote it was hardly possible to have said more; but thirty-five years have made great changes; and his statements are no longer adequate. May I hope that this paper will supply the want which now exists of a full summary of the present condition of this important subject? Even at this time, when mining is by no means in a flourishing condition, our metallic minerals are worth as raised about £150,000 a year; and we cannot credit our earthy minerals—our building and paving stones, clays, and the like—with being of less value; whilst the possibilities of development in both are very great.

AGRICULTURE.

It would require far more space than can be devoted to this section, within the compass of my paper, fully to indicate the bearing of the economic geology of Devon upon its agriculture. Few counties have such variety of soils and subsoils, ranging from the almost barren sand, the product of the surface decomposition of the granite, which covers much of the higher ground of Dartmoor, to the rich deep alluvium of such river valleys as those of the Exe, the Creedy, the Culm, the Torridge, the Teign, the Dart, the Plym, and the Tamar. Taken as a whole, the most fertile district is that of the New Red Sandstone; and apart from Dartmoor some of the

poorest land in the county is to be found overlying Carboniferous shales, and the Cretaceous gravels. The Devonian districts occupy somewhat of a middle place. The limestone soils, though fertile, are comparatively thin, and apt to scorch in dry seasons. Some of the predominating clays are exceedingly heavy. But there is no better land in the county than is to be found on certain of the Devonian greenstones, to the decomposition of which it owes its fertility. With so many kinds of subsoil and substrata, and such continual variations of level and exposure, even in limited areas, there is of necessity a wide range in comparative fertility and in the measure of adaptation for different crops. Hence the many-sided character of Devonshire agriculture, and, mainly, its excellence. A large area of the county remains yet rough and unenclosed; but it by no means follows that improvement is stayed by natural conditions. Dartmoor is our local synonym for all that is barren and bare; yet year by year the girdle of cultivation encroaches more closely on the Moor; and the humid climate of that elevated region has been shown to confer great capabilities. A few summers since, when the lowlands were parched and burnt up by excessive drought, the hay crop on Dartmoor was luxuriant. And so, too, the debt of the agriculture of Devon to Dartmoor is great, even if we do not regard its own productive powers. From this central plateau descend most of the rivers which diffuse fertility through the vales of the south and west. To the Exmoor table-land the north of Devon is similarly beholden.

The fertility of alluvial soils depends upon the character of the rocks whence they are derived. The *débris* of the crumbling sandstone cliffs of Teignmouth and Dawlish comes at once into cultivation. Some of the shales degrade into an unprofitable clay. Disintegrated granite by itself is poor, but in mixture may have considerable fertility. These considerations will help to show why it is not every stream whose waters are adapted for that system of irrigation, which forms a special feature of the agriculture of the county.

MINERAL MANURES.

Fuller mentions among the mineral manures used in Devonshire in his day, blue and white marl, chalk, lime, and sea-sand. We have little clue to the character of the marl or the locality whence it came. Probably it was employed mainly in the north-eastern part of the county, to which also the practice of chalking must have been almost wholly confined; since

there alone were marl and chalk readily accessible. Marling has very much gone out of fashion.

We have abundant evidence that the use of lime in agriculture is of no very ancient date. Risdon* (and he is confirmed by Westcote) speaks of it as of recent adoption. But it came rapidly into favour; and was long used with very little discrimination as a kind of universal remedy. Even in the present day its manurial value has been the subject of much controversy. Devonshire, on the whole, is well supplied with lime, though there are localities in which it is scarce, the limestone occurring in isolated patches and the cost of carriage being high. The chief sources of lime supply are the districts of Plymouth and Torbay, where a great deal of lime is burnt and forwarded by rail. Limestone is also shipped thence to be burnt at other places, though less now than formerly. There are many lime quarries in and near Yealmpton, Totnes, Ashburton, Brixham, Newton, Drewsteignton, and Chudleigh; and the South Devon Railway passes through large quarries at Stonycombe. On the other side of Dartmoor we find quarries at Meldon, Lifton, Sourton, Bridestow, and South Tawton. In the north of Devon the chief supplies come from the Ilfracombe district; where, and at Coombe Martin, Challacombe, Berrynarbor, Castlehill, Bampton, and Swimbridge, large quantities have been raised. Chalk is burnt for lime at Beer and Branscombe.

Where lime is the scarcest—namely, in the district back of the coast-line between Bideford and Boscastle—the shell sand of Bude comes in as a substitute. It has been so used certainly for three centuries, since Carew refers to it in his *Survey*.† Thousands of cartloads are sometimes removed in a day; and De la Beche calculated that in 1839 5,600,000 cubic feet from Bude and elsewhere were used in Devon and Cornwall annually.‡ Its fertilizing qualities depend on the carbonate of lime contained in the shells of which it is mainly composed.

BUILDING STONES.

Devonshire abounds in building-stones of various kinds, though few of them have ever found their way beyond the limits of the county. Their use is chiefly confined to their own more immediate localities, for the supply of the wants of which hundreds, if not thousands, of quarries have been opened.

* *Survey of Devon*, p. 11.

† First published 1602.

‡ *Report*, pp. 479-80.

Mr. R. Hunt, F.R.S., the Keeper of the Mining Records, in a *Report on the Building-stones of the United Kingdom* for the year 1858, published in 1860, enumerates sixty-five Devonshire quarries as having a more than merely local reputation and utility. There were granite quarries at Blackenstone and Westcott, Moretonhampstead; the Dewerstone; Heall, Dartmoor; Pewtor; Heckwood; and Lundy Island. One elvan quarry at Roborough. Two of trap at Pocombe and Dartmouth, the stone of the latter being used in London for roads. One of metamorphic rock at Sandquay, Dartmouth, employed for a similar purpose. Slate quarries at Burnshall, Longford, and Millhill, Tavistock; Coryton, Launceston; Cann, Plymouth; Claspery, Southmolton; Kingsbridge; Nethway, Brixham; Penricca and Rattery, Totnes; Woodland, Newton Abbot. Limestone quarries around Plymouth, Torquay, and Brixham; and at Chudleigh, Culm John, Drewsteignton, Ipplepen, and South Tawton. New Red Sandstone at Exminster, Heavitree, Pakeham, and Thorverton. Beerstone at Beer. Nearly half the quarries mentioned are of limestone, and fully half of these were worked principally for lime. The estimated total in tons of the stone returned (including a couple of small Cornish quarries) was 185,056, and the value £27,206. Mr. Hunt found the difficulties in the way of continuing these reports very great, and none have appeared since. The figures can only be regarded as approximate.

GRANITE.—The Dartmoor granite has been worked at several points, most extensively at Haytor; but the granite trade of Devon could never compare with that of Cornwall, and is now at a low ebb. Yet some of the Dartmoor granites would successfully rival the best Cornish. The absence of good roads partially accounts for the want of development; but while there is always a small demand for granite, it is only occasionally, and for special purposes, that this demand increases, and the Cornish granite has now almost entire possession of the field. The earliest railways of Devonshire were connected with its granite quarries. The first ran from the terminus of the Stover Canal, at Teigngrace, to the quarries at Haytor, whence came the granite for London Bridge. It consisted, however, simply of grooved blocks of granite, and was opened in September, 1820. The Princetown railway, from Princetown to Plymouth, has metal rails. It was projected about 1818, for the supply of the war prisons at Princetown, by Sir Thomas Tyrwhitt, and twenty-three of its twenty-four miles were opened in 1823. When the war

prisons were closed the line ceased to be of use except for the granite quarries at King Tor. The granite of Lundy Island is of good quality, and has been worked. The local name of granite—moorstone—arises from its association with the moorlands of the county. For ages it was procured from the surface blocks with which Dartmoor even yet is strewn.

ELVANS.—These are rocks of granitic character which occur in veins or dykes. They are in the main composed of the same constituents as granite, but differently arranged, and are often porphyritic. Some are admirably adapted for building purposes; others are worthless. The Roborough elvan, which crosses Roborough Down, near Plymouth, is the only noteworthy building elvan of Devonshire. It was a favourite material for dressings and carved work fully five centuries since, for it occurs in the ruins of the Carmelite Friary at Plymouth, which was founded in 1313. It has a felspathic base, with thinly disseminated crystals of limpid quartz, and numerous cavities, whence crystals have disappeared. The colour is a warm buff.

TRAPS.—The trappean rocks of the county are largely used for building purposes in their various localities. They vary widely in character; some are exceedingly hard and tough; others easily worked, but durable; others fairly adapted for rubble walling; others again decomposed and rotten. The best known building-traps of Devon are at and near Exeter. Rougemont Castle and many of the old structures in the city are built of a vesicular trap raised on the spot. A hundred years ago very similar stone was raised at Thorverton; and the felspathic traps of Pocombe and Posbury are still in demand. The stone is a dark ruddy brown with whitish veins. It forms the chief material of the Royal Albert Museum. The most compact stones are not always the most durable. Tavistock Abbey was built of a loose-textured, free-working trappean ash from Hardwick, about a mile from the town. It has proved exceedingly durable, and has a pleasing light-green tint. Tavistock New Hall is built of it, and the quarry is being re-worked extensively for the Kelly College. The greenstones are called locally dunstones; the blue and grey varieties being most valued.

METAMORPHIC.—The schists of the Bolt Head and Start Point district have been much used locally, and have weathered well, though not suited for fine work.

DEVONIAN.—The rocks of the Devonian system supply two chief classes of building-stone, the limestones and the slates, the sandstones being of more local occurrence and utility.

Centuries since, slate was very extensively employed for building; but it is now used for inferior work only; nor do the Devonian slates of Devon yield such good building-stone as the same rocks occasionally do in Cornwall.

The Devonian limestones are chiefly wrought in and around Torquay and Plymouth. Considerable progress has been made in their use since 1839, when Sir Henry De la Beche wrote: "They are rarely tooled highly for architectural purposes, though they would form a durable material where their gray tint would not be considered heavy."* The Plymouth limestones were certainly used for building over five centuries since, and have given abundant proof of their durability. These limestones are mostly crystalline, and not very readily wrought; but they look and last well. They range in hue from light gray to black, with different shades of red, and veins of white, red, yellow, and other colours; and admit, therefore, of effective chromatic treatment. The most important building in which they have been employed is the new Guildhall at Plymouth. They constitute the chief building material of the Three Towns, Torquay, and Newton. The objection raised to these limestones is, that they carry damp. Hence private houses built of limestone are generally stuccoed. Some of the Devonshire limestones are dolomitic, notably in the vicinity of Yealmpton. These, from their superior specific gravity, De la Beche considers peculiarly adapted for sea-walls.† The Plymouth Breakwater is of limestone from the quarries at Oreston.

The sandstones of the Devonian system have been occasionally used for building purposes, but their uses are purely local.

CARBONIFEROUS.—The rocks of the Carboniferous series quarried in the county do not call for much remark. They furnish a considerable quantity of rough building-stone; and "freestones" of fair quality have been worked in Clawton, Ashwater, Holwell, Beaworthy, and North Lew.

TRIAS.—The sandstones and conglomerates of the Trias present a wide range of adaptability, or the reverse, to building purposes. There are some notable exceptions, but as a class they are not distinguished for durability. They have been worked for centuries, and the products of certain localities have won considerable reputation. The conglomerates are the hardest of the series. At Heavitree they have long been quarried under the name of Wonford stone. They have been laid under contribution for the sea-wall at the bottom of

* *Report*, p. 491.

† *Ibid*.

Torbay, for which purpose they are admirably suited. There are quarries at Exminster, Kenn, and Pakeham; and the sandstone from Ugbrook has obtained considerable local reputation for dressings.

CRETACEOUS.—This system supplies the most typically perfect building-stone of the county, such a stone being one easily raised from the quarry, obtainable in large blocks, of an even and agreeable colour, and fine grain, working readily, weathering well. These qualities are all found in the famous Beer stone, the great west-country mediæval rival of the Caen. It occurs near the little port of Beer, at the passage of the chalk into the greensand, and is chiefly composed of carbonate of lime. In colour it is white, and in grain fine and even. It was quarried so far back as Norman days, and used extensively in the building of Exeter Cathedral. Long neglected, it is now rising into fame again, and has been used in several places by Sir Gilbert Scott, R.A. Soft when first quarried, it hardens by exposure; and while its chief uses are in internal work, it possesses more than average powers of resistance to atmospheric influences. The flints of Devon are seldom used for building.

ORNAMENTAL STONES.

Associating Cornwall with Devon, it may be safely asserted that in ornamental rocks and stones no district of England is so rich. Devon supplies an almost endless variety of marbles; Cornwall equally varied stores of granites and porphyries, and a stone that surpasses all others in beauty—the serpentine.

In an ornamental sense, the granites of Devon are almost wholly undeveloped. De la Beche speaks of a white granite near Okehampton as resembling statuary marble,* and there is a red granite at Trowlsworthy, near Shaugh, worked by the Messrs. Freeman, of Penryn, which is the handsomest rock of its class in the West. Some of the Devonshire granites are porphyritic, containing large crystals of felspar, and susceptible of very effective treatment.

The greenstones have only been polished occasionally, though they would be of great service in relieving lighter stones, and might often work well with the marbles. The green trap of Black Head, Anstis Cove, has been mentioned by Mr. Appleton, F.R.I.B.A., as peculiarly adapted for this purpose.

Most of the Devonshire limestones are sufficiently hard to

* *Report*, p. 501.

receive a good polish, and are thus in effect marbles. Those of the Carboniferous system are chiefly black and grey, but have occasionally been wrought to advantage in chimney-pieces. It is with the marbles of the Devonian system that we have chiefly to do; they constitute the widely-known and well-characterised Devonshire marbles. The Chudleigh marbles were among the earliest worked in Devon for ornamental purposes; though Westcote * contains a reference to a couple of varieties of stone which he considers of a porphyritic character, but which can hardly be any other than the marbles of Ipplepen, then recently worked. One variety was of a "dunnish murrie colour, diapered with blue and green, with running veins of white;" the other was of a "marble dye, intermixed with white of diverse forms and fashions, very delightful to the spectator's eye." These, however, are only casual notices, and the value of those rocks for purely ornamental purposes is a comparatively recent discovery. Though long quarried for lime and building, the fact that throughout the mediæval churches of Devon wherever polished stone enrichments are introduced, Purbeck stone was almost universally employed, indicates to me clearly enough that the builders were unaware they had in the coralline marbles of Torquay and Plymouth a substance far more beautiful than the shelly marbles of Dorset.

Ninety years ago, Gilpin, in his *Observations on the Western Parts of England*, declared † that he thought the Plymouth more beautiful than any foreign marbles. Polwhele, a few years later, ‡ directed special attention to the marble of St. Mary Church as "of superior beauty to any other in Devonshire, being for the most part either of a dove-coloured ground, with reddish-purple and yellow veins, or of a black ground, mottled with purplish globules." Within the past fifty years the fame of the Devonshire marbles has spread far and near, and they are now in very general request. They have found their way into every part of the kingdom, and have even been shipped to Italy.

The principal localities of the Devonshire marbles proper are Torquay, Ipplepen, and Plymouth. The Ipplepen marble is chiefly characterised by a roseate dove-colour ground, with reddish veins. The Plymouth and Torquay marbles closely resemble each other. The prevailing hue is grey, with veins of red, white, black, and brown; but the bases of some are red and yellow, and of others black; whilst others again are rendered exceedingly handsome by the "figure" of the fossil-

* *View of Devon in 1680*, pp. 66-7. † Page 203. ‡ *History of Devon*, p. 49.

shells and corals which they contain. Of the latter class are the madrepora marbles. The Devonshire marbles are chiefly employed for purposes of church decoration—for flooring, panelling, and even for columns. But there is a large trade done at Torquay, especially in small articles of jewellery and household knickknacks; in the manufacture of which a good deal of taste is displayed, alike in the selection and the arrangement of the pieces of which they are composed. There is an encrinital marble at Ilfracombe of which some use might be made.

Our minor decorative stones are numerous. Devonshire fluor spar has rarely if ever been adapted to ornamental purposes, for which indeed it is little fitted. The calcite which abounds in the limestone quarries has, however, been utilised. I saw recently a set of very handsome balusters which had been turned out of Plymouth calc spar by Messrs. Goad of that town. Jasper, though seldom worked, is by no means of infrequent occurrence. There are large blocks of the red variety near Brent Tor. Our rock crystals are sometimes cut and mounted in jewellery. The rarer materials of our local lapidaries are the calcedonies, jaspers, agates, carnelians, and silicified woods associated with the chalk and greensand of the north-east of Devon, fine examples of which are found on the beaches at and near Sidmouth. Some of these stones are very handsome, and well adapted for the purposes of personal adornment to which they are applied. Crystals of tourmaline have occasionally been cut and set; but our garnets and opals have only a mineralogical interest. Amber is said to have been found on the Devonshire coast, but this seems doubtful.

ROOFING SLATES.

There are many good quarries of roofing slate among the Devonian strata of the county; but they are not worked so extensively as was once the case, and the demand for their produce is now chiefly local, the slates of the Delabole district and of Wales being most frequently employed. The largest Devonshire slate quarries are at Millhill, near Tavistock; and considerable quantities were once raised at Cann Quarry, near the Marsh Mills station on the Tavistock railway. Other quarries have been or are now worked in the vicinities of Bickington, Ashburton, Buckfastleigh, Staverton, Rattery, Harbertonford, Ivybridge, Ugborough, Brixham, Leigham, Buckland Toutsaints, and elsewhere, small deposits of roofing slates of fair quality being by no means of unusual occur-

rence. From the Buckland Toutsaints quarries large quantities of slate were, before the Dutch war of 1781, exported to Holland.

ROAD AND PAVING MATERIAL.

Slabs of the local limestone are largely used for flagging in the limestone districts; but though durable they rapidly polish under the continual attrition of the feet. There is some compensation for the undue smoothness of their surface in the beauty of the appearance which they then present, after showers of rain. Seventy years ago a traveller recorded with surprise that the streets of Plymouth were paved with marble, and since then this has been a matter of constant remark with strangers. The limestone flags used in the Three Towns are squared; at Torquay they are worked in as irregular polygons.

Granite is occasionally used for flagging; but its expense militates against its general adoption. It has, however, of late come largely into favour for kerb stones, especially for footpaths which are not flagged, and being wrought in blocks nearly a foot broad is convenient to walk on for those who are not particular about keeping the wall.

The more schistose or laminated sandstones of the district supply a little flagging; and some of the quarries of roofing-slate furnish large and durable slabs, which are chiefly used for internal purposes, and the flagging of courtlages.

Limestone is occasionally used for pitching, but is not well adapted for the purpose. The best pitching stone in the district is the granite, which splits up easily into rhombs. The red-brown Devonian sandstone of Bovisand, near Plymouth, has been extensively used for pitching in the Three Towns. Like granite, it squares easily.

There is in the county an abundance of excellent macadamizing material, though many localities are badly supplied. Granite crushes too easily to make very good "road-metal;" and this is still more the case with the ordinary sandstones. Flints are largely used in the districts where they occur; and the cherty beds of the Carbonaceous series are also of much utility. The limestones answer well, though rather hard than tough. The best road metals of the county are derived from the trap rocks, some of which are not only very hard but very tough likewise, and while they last long and make hard roads cause little dust or mud.

For private and garden walks the finer gravel is frequently used, that from Aller, near Newton, being a fair example.

Sometimes crushed granite is employed, which has a very agreeable sparkle; and occasionally picked calcite from the limestone quarries, which looks well when broken small, though it will not stand heavy traffic.

CEMENTS.

Lime is the chief cement produced in the county. Its character and quality vary with those of the parent limestones. The calcareous beds of the Devonian system, as a rule, yield better lime than those of the Carboniferous. The chalk lime is inferior. Occasionally highly calcareous traps have been burnt for lime, and have yielded cement of fair quality. A bed of limestone at Oreston, near Plymouth, was found to yield a good hydraulic lime. The ordinary hydraulic lime of the district comes from the Lias limestone of Lyme Regis. This is just beyond the borders of Devon, in which the Lias is but sparingly represented; but the manufacture of the Lias cement is carried on at Plymouth and other places in Devonshire, to which the stone is shipped.

SAND.

The fine shell sand of the coast at Bude is much used, as stated heretofore, for manure. For mixing with lime to form mortar the river sands are employed where available; and in their absence, frequently, sea-sand is used, but is ill adapted for the purpose on account of the quantity of salt with which it is impregnated. Mine sand, which is produced in the operation of dressing the ores, holds a middle place. Granite sand is found at many points on Dartmoor, and is of considerable value; and there are occasional deposits of sand—the remains of old river beds—as on the Hoe, at Plymouth, that have some local importance. The sand of the Warren, near Dawlish, has been used for moulding purposes in foundries.

MILLSTONES.

The Heavitree conglomerate was formerly employed in the manufacture of coarse millstones for shelling clover, and for separating the wheat from the close husks taken off the ears in the process of thrashing.

WHETSTONES.

Whetstones have long been manufactured from indurated concretions found in the lower part of the greensand on the Blackdown Hills, which is wrought by means of levels. Under the name of Devonshire batts a considerable part of the south

of England was supplied with these stones ; but the demand has fallen off with the introduction of artificial preparations, and of mowing and reaping machines. Scythe stones were also made at Kenn when Lysons wrote (1822).*

OILSTONES.

These are made from a stone which occurs near Wheal Friendship, Tavistock, and have considerable local repute.

CLAY.

The clays of Devon are among the most important of its commercial products. There are few districts in the county that do not yield clay of some kind, and in some places it literally abounds. Most of this clay is of inferior quality, but it has been frequently utilized for brickmaking. Other clays are well adapted for the manufacture of coarse ware, and there have long been potteries for this manufacture in the neighbourhoods of Bideford and Plymouth. At Fremington there is much red clay, and at Wear Gifford, white ; and in these localities excellent sewage ware is made.

The most important clays of the county are those which are found in the vicinity of Bovey and Newton ; the china clays of Dartmoor ; and the terra-cotta clay of Watcombe, near Torquay.

Connected with the lignite deposit of Bovey Tracey, there are extensive beds of clay which reach as far as Aller. The ordinary varieties may be described as natural china clay, having been derived from the decomposed granites of Dartmoor, washed down into the bed of a lake which then occupied what is now Bovey Heathfield. These clays have long been known. They were used for many years in the potteries at Bovey and Indio, which were established about 100 years ago. The Bovey clays are now only employed for bricks and similar purposes. The clays at the other extremity of the deposits, Teignrace, Kingsteignton, and Aller, are of very superior quality, and are largely exported. In 1800 the quantity shipped was about 2,000 tons ; in 1873 it was 56,451.†

The Aller clay is worked up in a pottery on the spot into sanitary and architectural ware of excellent quality. The Bovey Pottery, employing about 250 hands, uses chiefly the

* *Magna Britannia*—Devonshire, p. ccxciv.

† *Mineral Statistics of the United Kingdom*, by Mr. R. Hunt, F.R.S. From this invaluable work most of the recent statistics concerning clays and metallic minerals are taken.

Dorsetshire clay, and makes the best descriptions of earthenware.

There are china clay works at several points on the west of Dartmoor, where large deposits exist. The oldest and the largest is that at Lee Moor, near Plympton, the property of the Messrs. Martyn. It is a noteworthy fact, that with china clay so close at hand, Cookworthy, the founder of the Plymouth pottery, and the first maker of true porcelain in England, should have gone so far as the west of Cornwall (Breage) for his supplies. At Lee Moor the refuse from the clay manufacture is burnt into bricks and tiles of high quality, both for fire-resisting and ordinary building purposes. The china clay raised in 1873—nine works in operation—amounted to 27,197 tons.

The terra-cotta clay at Watcombe is a recent discovery. It is perhaps the very finest terra-cotta clay in England, and is wrought in an art pottery on the spot into a ware of the finest texture, and of great beauty, the most beautiful in fact now made.

The clays of the county are employed for building purposes in other ways than in the manufacture of bricks. Houses have been built of "cob" in Devonshire from a very early date. "Cob" is a mixture of coarse clay and straw, and walls are built by its being rammed into a boarded framework. This shifts as the work proceeds in the manner of the modern concrete building apparatus, which so far simply follows the old lines. I have heard "cob" contemptuously called "mud." Much cannot be said in favour of its appearance, nor is there any reason why it should be retained in preference to brick or stone. Still it has the merit of forming, when properly treated, dry and comfortable cottages.

METALS.

Metal mining in Devon originated in a period of very remote antiquity. I have elsewhere given reasons* for holding that tin streaming in Cornwall was carried on far back in pre-historic times, when the general level of the West of England was at least some thirty feet higher than it is at present, and when the mammoth either still existed here or had not long disappeared. Though not so richly metalliferous as the sister county, Devonshire has many metallic lodes. Dartmoor and its borders constitute one great metalliferous district; Exmoor and its borders another. The chief mining

* Vide *Transactions Plymouth Institution*, 1874.

centre is Tavistock ; but there are several mines around Ashburton. North Molton is a very promising locality, and there are many scattered mines of various kinds. Metal mining in Devon has been subject to a great many fluctuations, and at present is not too prosperous. The metallic ores raised in Devon in 1873 were of a value of £149,503 12s. 10d. In March last, according to the returns of the inspector, Dr. Foster, there were 63 metal mines in operation in the county. I give the details under the different heads. When a mine produces various metals in quantity (and there are nine worked for more metals than one) it is counted under each head.

ANTIMONY.—Various ores of antimony occur in Devon ; and antimonite has been raised near Hennock and Bovey in small quantities.

ARSENIC.—Devon contains large quantities of arsenical pyrites ; but it is only very recently that arsenic has been produced to any extent. In Cornwall white arsenic has long been manufactured in the process of calcining the tin ores ; but the Devonshire mines neglected it until arsenic reduction works were established in connection with Devon Great Consols. These in 1868 produced 473½ tons ; but they are now carried on far more extensively—the demand for arsenic having enormously increased—and are the largest arsenic works in the world. In 1873 the returns of arsenic, mostly refined, were 1,953 tons. In March last there were three arsenic-producing mines.

BISMUTH.—The ores of bismuth are found but rarely, and not in such quantity as to be commercially valuable.

COBALT.—Cobalt ores occur in several localities in Devon, but like those of bismuth, sparingly. 1,700 lbs. of ore of inferior quality were however raised and sold from Wheal Huckworthy, Sampford Spiney, in 1820.

COPPER.—Copper mining, in modern days at least—for it is probable that some of the bronze of the bronze period of Devonshire was manufactured on the spot—dates from early in the last century, though it was not until the commencement of the present that the copper mines of the county really became important. North Molton is one of the oldest centres of copper mining in Devon. A century and a half since copper ore was plentiful in that locality. Devon contains what was once the most productive copper mine in the kingdom—Devon Great Consols, which, on an original outlay of £1,024, in twenty-one years returned just a million profits ; yielding £200,000 in dues to the mineral lord, the Duke of

Bedford. Copper mines are now worked in the vicinity of Tavistock, Buckfastleigh, and North Molton. The chief ore raised is the chalcopryite or yellow ore; but gray and other ores occasionally occur in considerable quantities. The yield of copper ore in Devon has been subject to considerable fluctuation. In 1801, 1,078 tons were raised; in 1810, 3,747 tons (from seven mines); in 1820, 4,037; in 1830, 4,034. When Devon Great Consols was set to work it speedily sent up the produce, returning as much as 25,746 tons in one year. In 1857, with 19 mines at work, 39,069 tons were raised; 1860, 35,524; 1862, 41,513. In this year there were 24 mines at work, and the produce is the highest on record. Since then there has been a steady and almost continuous decrease. In 1870 the mines had fallen to 15 and the produce to 24,752, and in 1873 only 17,007 tons 11 cwt. were raised. In March last there were 16 copper mines in the county.

GOLD.—This metal has been found at several localities in Devon; though, it is hardly needful to say, in very small quantities. It has chiefly occurred in the beds of the Dartmoor streams; but about fifty years since was discovered by Mr. Flexman in grains and small plates in a lode of hematite at North Molton. Both the Britannia and Poltimore mines were found to produce it; but the attempt to work for gold specially did not prove commercially successful.

IRON.—This metal was raised in Devon at a very early period; and there still remain abundant vestiges of pits sunk on the hills capped by the greensand at Blackdown, Dunkeswell, &c., for the extraction of the surface iron, which was probably smelted in bloomeries on the spot. The iron mines of Devon are more widely distributed than those of any other metal. Iron ores occur in workable quantities at Shaugh, Rattery, Sharpham, Brixham, Prawle, South Brent, Haytor, Ilington, Smallacombe, Christow, North Molton, and many places in the Exmoor district. In fact the iron ores of Devon are almost undeveloped; though considerable attention has been turned of late to those in North Devon. Between 1796 and 1802, 9,293 tons of iron ore were raised at Coombe Martin and shipped to Wales. The principal varieties of ore worked are hematite, chalybite, limonite, and magnetite. A singular series of successive beds of the last mentioned ore occurs at Haytor. In the days of pounce, large quantities of micaceous iron ore were sent from the county to London and sold as Devonshire sand, realising £3 3s. to £8 8s. a ton. The production of iron ore in the

county has varied considerably. In 1857, 2,000 tons only were raised; in 1864 the yield had increased to 11,068; and in 1866 it was 40,671. The next year it fell back to 10,212; by 1872 it had again risen to 29,361; and 1873 sent it back again to 10,309. In March last Devon had 19 iron mines.

LEAD.—The lead mines of the county are of very great antiquity, dating back even to the Roman occupation. They were worked for the silver contained in the lead, for the Crown, certainly as early as the reign of Edward I., when they are recorded to have been very profitable. The two lead mining districts are around Beeralston and Coombe Martin. The latter mines were re-opened in the time of Elizabeth, and have been worked at various times subsequently. The most important lead mines of late years have been on the Tamar; but one of the most productive of these was stopped by the water of that river breaking into the workings. A considerable quantity of lead ore has been raised at Christow. The principal ore is the sulphuret—galena. The lead mines of the county are far less productive than formerly. In 1857, 15 mines produced 2,590 tons 11 cwt.; in 1868 there were only two which yielded 1,522 tons 12 cwt. In 1872 there were five mines producing 746 tons 9 cwt. In 1873 the produce was 676 tons 9 cwt. In March, 1875, there were ten lead mines.

MANGANESE.—Devon has long been the chief, and is now the only source of the manganese supply of the kingdom. About a century since manganese ores were first raised at Upton Pyne, and a little later, on the same lode, at Newton St. Cyres. These mines were considered exhausted about 60 years ago, and they have recently been re-opened without effect. Manganese was afterwards found at Doddiscombeleigh, Ashton, and Christow; and about 1815 was discovered in what is now *the* manganese district of the county *par excellence*, the neighbourhood of Milton Abbot. The chief ores worked are the grey and black oxides, psilomelane and pyrolusite. Between 1803 and 1810 the produce of the county averaged about 3,000 tons annually. In 1837 Sir H. De la Beche reckoned it at 500 tons. In 1868, with a small supply from Cornwall, the total was 1,700 tons; and in 1873 it was 8,671 tons 6 cwt., of which 17 only came from Cornwall. In March last there were 10 manganese mines at work in the county.

MERCURY.—Much interest was excited last year by the reported discovery of native quicksilver in the rocks near the Head Weir at Exeter. Some was found, and mining was

suggested; but it seems certain that the metal had been thrown or placed there, so that we cannot, I think, much as we should have desired it, add mercury to the list of our Devonshire metals.

SILVER.—Native silver and several of its ores occur in Devonshire, but in very small quantities. Almost the sole source of Devonshire silver has therefore been its argentiferous galena. In 1293, 270 lbs. of silver were thence produced in the county. Some of the Devonshire lead ore is very rich in silver, ranging up to 140 ounces to the ton, and even beyond. Wheal Florence, near Tavistock, sold some silver lead ore at £90 per ton. Considerable quantities of silver have been produced in the county from time to time. In 1857, 50,262 ounces were raised; in 1868 the yield was 39,865 ounces. 1870 brought it to 24,706; 1873 to 6,510, from seven silver lead mines.

TIN.—There are vestiges of ancient streaming for tin to be found in almost every quarter of Dartmoor; and some tin is still raised on the moor. The old stannary towns of Devon were Tavistock, Ashburton, Chagford, and Plympton; the last-named so constituted in 1328; and the first three mentioned as such in a charter of 1305. They were the centres of the ancient tin mining districts. Devonshire at one time yielded more tin than Cornwall, and its coinage dues were farmed in 1213 at £200, whilst those of Cornwall were farmed at 200 marks only. In the next century, however, Cornwall attained that preponderance in the production of tin which she has since and increasingly maintained. Tin is found nowhere in Devon, save on Dartmoor and its borders; but explorations are in progress at Devon Great Consols in the hope that that famous copper mine may, like Dolcoath and many others in Cornwall, yield tin in depth. The only ore of tin raised is the oxide—cassiterite. The production of tin in Devon has long been small. In 1868 three mines raised 137 tons 15 cwt. In 1873 only 93 tons 8 cwt. were raised. There were 13 tin mines in Devon in March last.*

TUNGSTEN.—Wolfram (tungstate of iron) has been found in small quantities in the same locality.

URANIUM.—Pitchblende (proto-peroxide of uranium) has been found in the Tavistock district, but not to value.

ZINC.—Blende or blackjack (sphalerite) occurs in many of the mines of Devon, and is occasionally sold, but is not of much commercial importance. In 1857 three mines sold

* The number of mines in operation is taken from the report of Dr. Foster, F.R.S., inspector of the metalliferous mines of the district.

775 tons; in 1868 only 69 tons were sold; and in 1873 123½ tons. There is now only one zinc mine in the county.

SULPHUR.

The time may come when the sulphur-bearing ores of this county, at present of little note, may be of great value. They are by no means neglected, however, even now. Iron pyrites, or mundic, is the chief sulphur ore, and contains rather over 50 per cent. of sulphur. It is used in the manufacture of sulphuric acid and copperas; is widely distributed, and in some mines is found in very large quantities. Devonshire is producing an increasing supply. In 1858 the produce was only 685 tons; in 1867 it had risen to 2,758 tons; and in 1873 was 2,732 tons 8 cwt.—value, £2,881 14s. 11d. Two mines were worked for iron pyrites in March.

PAINTS.

Devonshire has produced, and still continues to do so, large quantities of mineral paints. The manufacture of black paint from the anthracite of Bideford is now of considerable standing. The anthracite is ground up finely, and then used in the ordinary way. For many years large quantities were consumed in the Government dockyards. Umbers and ochres were manufactured in North Devon—at East Down and Coombe Martin—nearly a century since; and more recently umber was raised at Berrynarbor and Ugbrook. Mr. Wolston, of Brixham, started a paint manufactory in connection with his iron mines, in which the softer parts of the ore were made into ochreous pigments, and similar paints are still manufactured there. Ochre is now manufactured, among other places, at Devon Great Consols; Laira, near Plymouth; and Aller, near Newton Abbot. At Devon Great Consols it is made from the iron oxide thrown down in the tanks in connection with the process by which the copper is precipitated from the cupreous water. There is a very large deposit of umber worked at Ashburton. The Mineral Statistics for 1873 state that 10 tons of ochre and 1,250 tons of umber were raised in Devonshire in that year, of a total value of £1,952 12s. 8d.; but the quantity of ochre must have been largely in excess of the amount stated.

HEAT AND LIGHT PRODUCERS.

Though so large an area of the county is occupied by rocks of the Carboniferous system, the coal measures are absent.

The belief, based upon the indications presented by the carbonaceous matter occasionally present, that coal was to be found, has led to several costly and of course fruitless searches, especially in the vicinity of Exeter, Bradninch, and Tiverton. There are, however, in North Devon several beds of anthracite or culm, which would seem, from the traces of ancient workings on their outcrops, to have been known at a remote period, and somewhat extensively wrought. The chief mines were near Bideford. One of the principal uses of the anthracite when it was raised was to burn lime, a purpose for which the Welsh anthracites have been largely imported into the county. No anthracite is now raised for fuel in Devon.

There is a very extensive deposit of lignite or brown coal at Bovey Tracey, which, with its accompanying clay beds, has been fully described by Mr. Pengelly, F.R.S., F.G.S.* This lignite is said to have been first worked early in the last century;† and it was at one time largely used in the potteries at Bovey Tracey and Indio, the latter no longer in existence. The lignite emits an unpleasant smell when burning, and therefore was never much used for domestic purposes, except in the poorer class of cottages. Moreover it is not a good fuel, and to be employed to the best advantage needs to be burnt soon after it has been raised. It has almost ceased to be of commercial or economic value; and is only used at Bovey to burn bricks, and to warm the drying-room in which the green ware is deposited, after it comes from the hands of the thrower or moulder, until it has hardened sufficiently to undergo the next process.

Dartmoor has an enormous and almost inexhaustible store of peat, which in some places is upwards of thirty feet deep, and which for ages has been a valuable source of fuel in the moorland and bordering districts. A peculiar form of peat, locally called blackwood, was formerly dried and charred, and used by the moorland smiths in tempering edge tools. Peat when distilled produces naphtha, paraffin, acetic acid, sulphate of ammonia, and other matters; and for some time the prisons at Prince Town were occupied by a company as peat naphtha works. The undertaking was not commercially successful; but during its continuance the works were lighted with peat gas. Under the present régime large quantities of peat have been cut by the convicts, and the prison was long lit in a similar way, the residuary charcoal being used for fuel and sanitary purposes, and the ashes as manure. The

* In a monograph, and also in *Devon. Assoc. Trans.* vol. i. p. 29, and elsewhere.

† LYONS' *Devon*, p. ccxcii.

use of peat for the manufacture of gas (in which it was sometimes used alone, sometimes with a little coal) has been discontinued from temporary causes. There are about one hundred patents for the manufacture of peat into a more concentrated fuel; and companies have been formed for carrying out some of these processes on Dartmoor. They could hardly be said to have reached the practical stage before they were abandoned, and the peat of Dartmoor therefore remains a vast mine of almost wholly undeveloped wealth. To a smaller extent the same may be said of Exmoor.

Petroleum shale was discovered to exist in the county last year at Barnstaple, and has been described by Mr. T. M. Hall, F.G.S.* Petroleum has likewise been observed in the neighbourhood of Chudleigh; but in neither case have there been any commercial results.

MINERAL SPRINGS.

The purest waters of the county are those which are derived from the granite. In the limestone districts the springs generally contain marked quantities of carbonate of lime, which makes them, in common parlance, "hard," and ill adapted for washing purposes. There are a good many springs in Devon of a chalybeate character, at, among other places, Lifton, Totnes, Ashburton, Ilsington, Ideford, Kingsteignton, St. Sidwell, St. Thomas, Cowley Bridge, Little Haldon, Swimbridge, Northmolton, Castlehill, and Anchorwood, Barnstaple. None of these are specially used for medical purposes, and the only instance of a medicinally-employed spring in the county with which I am acquainted was that which was once known as the Victoria Spa, at Plymouth, in connection with the Royal Union Baths. Neither Baths nor Spa now exist. The water came from a boring 360 feet deep, and the dry salts in a wine pint were: chloride of sodium, 96·64 grains; muriate of magnesia, 18·68; muriate of lime, 15·10; sulphate of soda, 9·55; sulphate of lime, 8·94; carbonate of lime, 2·06; carbonate of iron, 0·69—total, 151·66. The specific gravity was 1013·3, at 62°; and there were 8·1 cubic inches of carbonic acid gas per imperial wine pint. The spring never attained any note.

MISCELLANEOUS MINERALS.

BARYTES.—Barytes occurs in the county, but not in sufficient quantity to be of value.

* *Devon. Assoc. Trans.* vol. vi. p. 547.

FLUOR SPAR.—This spar occurs abundantly in some parts of the county, especially in association with the lead ores. It is used as a flux in reducing iron and copper ores, and for the manufacture of fluoric acid. The demand appears to vary considerably. In 1857, East Tamar Consols sold 1025 tons. No sales for Devon were recorded for 1873.

GRAPHITE.—This mineral is found in Cornwall, but not, so far as I am aware, in Devon. Vancouver, in his report on the agriculture of the county, states that plumbago had been found near Bovey, and sold in Exeter. No one else has recorded the occurrence of graphite in that locality, and in all likelihood Vancouver really refers to micaceous iron, which is found there.

GYPSUM.—Small quantities of gypsum are obtained from the red marl near Branscombe.

POWER.

Although deprived of coal, the physical peculiarities of Devonshire give it great, but little recognised, advantages in the production of power. Though once somewhat common, hardly a windmill now exists in the county, yet few localities are so well adapted for the utilization of these cheap and effective machines. Hills abound, and the sea-breezes sweep from one coast to the other; so that the slack times, with a judiciously-placed mill, would not be very frequent or prolonged. Windmills succeed elsewhere, and with our natural advantages I cannot see why they should not do so here also.

But it is the water-power of Devonshire to which I would direct special attention. This is literally enormous; but our water-wheels and other hydraulic machinery hardly encroach upon its borders. The rainfall of Devonshire for the eight years to and including 1873 averaged, according to the tables of Mr. Pengelly, F.R.S., published in our *Transactions* last year, 44.29 inches. This would make the total annual rainfall of the county, in round numbers, 260,000,000,000 cubic feet, or one billion six hundred thousand million gallons. In a flat county the rainfall is of comparatively little importance as a motive power; but in a county like Devonshire, where hills abound, where the centre of the district is occupied by a high table-land, forming a huge reservoir, whence rivers descend on all sides, the fact is very different. Let us see if we can form some approximate idea of what the yearly water-power is of Dartmoor alone—the power exerted by its rivers and streams as they flow from its hills to the sea. Dartmoor con-

tains about 130,000 acres. Its highest points are upwards of 2000 feet above the sea level, and its average height may be calculated at about 1200 feet. There are rainfall records from five Dartmoor stations, varying in height above the sea from 1500 feet to 650. For the eight years already mentioned the average rainfall was 66·466 inches; but inasmuch as the higher parts of the moor have a much heavier rainfall than the lower, and the highest station is 500 feet below the highest point, there can be no doubt that the average rainfall is considerably more than this. However, as we can only approximate, I will take it at 65 inches. This would give us 235,950 cubic feet of water per acre, or 30,773,500,000 over the whole of the moor; and if the whole of this water could be gathered into one stream flowing over a weir, it would make a river about eighty feet wide and three feet deep, pouring down from the moor without check or cessation day and night year after year. There is no great difficulty in calculating the motive power of such a stream as this. Let us see what could be got out of it by putting it to work a series of overshot wheels, so placed as to utilize the entire fall of 1,200 feet, which I have assumed as the average height of the moor above sea level. Taking the amount of work actually performed by a water-wheel at Wheal Friendship as a standard—one of a series of seventeen, which utilized an aggregate fall of 526 feet—we get the following results: An actual effective horse-power, calculated at 33,000 foot-pounds, of 90,000 horses, or, since the effective power of overshot wheels is to their theoretical as ·68 to 1, a total horse-power exercised of 120,000. These are startling figures; but if we compare them with actual horse labour, they will appear more astounding still; for it would require 400,000 horses working eight hours a day, raising 22,000 foot-pounds per minute, to do the same amount of work. In other words, the annual rainfall of Dartmoor, assuming that it all went through rivers to the sea, is equal to the performance of as much work as 400,000 horses, and expends as much power as would equal 550,000. And if we take the rest of the rainfall of Devonshire into account, assuming an average height above the sea of the non-Dartmoor portion of 300 feet, we find that the total effective power of the rainfall of the county is equal to something like 1,100,000 horses, and its expended power equivalent to about a million and a half. This, be it remembered, is on the presumption that the power is utilized in working overshot wheels. Applied to water-pressure engines, much higher results might be obtained.

I do not, of course, mean to assert that this amount of power, or anything approaching it, is available. Great part of the rainfall returns to the air by evaporation, and never enters the streams; the proportion that does so for Europe is calculated at about two-thirds. The evaporation of Dartmoor, however, is very much below that amount; for the great bulk of its rainfall either rushes off the rocks at once into the streams, or sinks into the peat-bogs, wherein it is stored as in huge sponges. So, too, it would not be at all possible to utilize the whole of the fall of every stream; but when every allowance is made, it will be seen that the fraction of realizable power at present utilized by our mills and water-wheels is so small as hardly to be appreciable in comparison with the possible aggregate. Devonshire has here an immense reserve of power, which, when our coal-fields are exhausted, may restore her to that manufacturing pre-eminence which she so long enjoyed. Granted that extensive works would have to be undertaken to equalize the supply, what places could be better suited for their construction than the valleys of Dartmoor, and in a smaller degree those of Exmoor?

Nor is this all. Devon, in common with all other maritime counties, possesses—but to an unusual extent—enormous means of developing power in the rise and fall twice a day of the tidal wave. Here, again, is a source of power almost wholly unrecognized, but of untold capabilities. Something is done at different points by throwing dams across little creeks, and thus forming tidal mill-ponds; but the aggregate is very small. Though Great Britain possesses more machinery than any other nation, it has been calculated that the force exerted by the tides daily along her coast is far more than sufficient to keep the whole of that machinery in motion without resort to steam. Some day we may be glad to realize this.

There are many ways in which the abundant rainfall of Devonshire has a high economic value apart from the question of power. In agricultural, mining, and manufacturing operations it is alike indispensable; nor, were proper means of storage and distribution devised and carried out, need there ever be much complaint in our humid climate of the effects of drought.

THE ECONOMIC GEOLOGY OF DEVON.

BY EDWARD APPLETON, F.I.B.A.

(Read at Torrington, July, 1875.)

THE economic geology of a district embraces so many subjects, that in a paper restricted to so short a time in delivery it is only possible to merely mention some of them, and but slightly touch on others; for the effect of the geological conditions of any place influences the people in their employments, habits, and wealth (not only directly, but also indirectly), in the matters of climate, agriculture, and (may it not be added?) mental cultivation; for is it not a fact, that the landscape beauties of a county or district, caused by its geology, frequently inspire poets, painters, and men of science, leading them to portray with pen and pencil the charms of the scenery, and to search out the hidden mysteries of nature? Would even the society which I have the honour of addressing probably be in existence but for the abundant sources of natural science in the county? This paper, however, will be confined to the consideration of some of the geological products of the county, and their application to every-day life.

Devonshire is particularly rich in mineral products apart from the metals; for within her boundaries are found granites, limestones, sandstones, trap rocks, slates, clays, gravels, and a small amount of coal.

It is proposed in this paper to treat of these materials under the heads of Building Materials, Clays, Coal, and Road Materials, by way of grouping the products under definable heads.

BUILDING MATERIALS.

Examining the geological map of Devonshire, we find a large tract of country, occupying almost the centre of the county, and constituting, as it were, the backbone (in a vertical position), coloured pink. This denotes the granite,

and marks out tolerably closely the general watershed of the district; for from it we find issue the sources of our main rivers, the Teign, Dart, Torridge, Taw, the Okements, Avon, Erme, Tavy, and Tamar. The summit of this district is about 2,050 feet above the sea, at Yes Tor. The boundary of the granite district may be roughly defined by a line commencing close to Okehampton, and skirting Moretonhampstead, Lustleigh, Holne, South Brent, Bickleigh, Walkhampton, Sampford Spiney, and running on to Lidford, embracing some of the most beautiful scenery of the county.

The granite of this district varies greatly in quality, the surface boulders being mostly coarse and crumbly from the influences of weather, and unfit for the better class of building purposes and road-mending; but the sounder stones are frequently split up to form gateposts, crossings of streams, and the rough dry-walling enclosing fields and denoting boundaries. Some of these rough fences are admirable specimens of good masonry; for the very absence of mortar necessitates a close matching of the stones to fill up what would be the mortar interstices in ordinary walling. The superior granite of the Moor, found at Heytor, has been quarried for a long period, and was selected for the construction of the present London Bridge. To convey the stone for shipment, a granite tramway was constructed, which has now almost gone, in consequence of the Moretonhampstead Railway traversing a considerable distance along the route. This tramway was constructed exactly the reverse of our modern railways, the tram being furnished with a flange, instead of the wheel of the carriage, giving the advantage of permitting the waggons to be used for general purposes as well as on the tram. The tramway commenced at the quarries, crossed Bovey Heathfield and Knighton Heathfield, and continued to the head of the Stover Canal at a spot known as Ventover, near Stover House. The granite of Dartmoor is not so pleasing in appearance in some respects as the Scotch granite, being coarser in grain and not so clean in colour; the large patches of felspar, known locally as "horse's teeth," also very much mar its appearance. It is, however, a good durable stone, and has been used in the great modern work of the metropolis, the Thames Embankment, and also in some of the new bridges and other important works.

A word or two as to the treatment of granite as a building material. In the opinion of the author granite always looks best when used in large plain blocks. The surface treatment can hardly be too simple or severe. Anything like elaboration

of workmanship is completely lost labour: fine mouldings, sinkages, and carving are entirely thrown away. This probably is due to the mottled graining of the stone neutralizing shadows. Perhaps the finest treatment of any is to simply *spall* the stone with a hammer, and show a rough, rugged fracture, tooling only where joints and angles are necessary. Newgate Prison is one of the best examples of granite building, the architect having fully caught the peculiar features of the material, and stamped his building as a prison, both in the material and the workmanship on it.

Unlike the blue and red granites of Scotland, Dartmoor granite does not develop well by polishing, the change of colour by the process being very slight, and certainly does not repay the labour; in fact, nature seems to point out that roughness, ruggedness, and boldness are the proper treatment of our moorland stone.

There is a very superior granite found near Okehampton, in the valley of the West Okement. It is a beautiful material, and frequently almost as white as statuary marble. It occurs in patches, and varies in colour, but is generally much finer in grain than the Heytor granite.

Occasionally red granite is met with, but in such small blocks as to be unfit for building purposes.

LIMESTONES.—Devonshire is particularly rich in good limestone for building purposes. The best known and esteemed quarries are at Plymouth, Yealmpton, Berry Head, St. Marychurch, Ipplepen, Buckfastleigh, Newton Abbot, Ashburton, Chudleigh, and Westleigh. Westleigh stone is largely used for the best description of work about Exeter. The colour of the stone varies through all the shades of warm and cold greys. There are many other quarries in the county, but they are chiefly worked for the purposes of making lime. The dark blue on the geological map denotes limestone. Much that has been said about granite applies equally to limestone: it always looks well when used in large rough blocks, and with rough, rugged, undressed faces. But, unlike granite, it will bear, without injury to its appearance, a large amount of labour. But, excepting in the high-class work of polishing, the cost of labour is so great as almost to exclude anything like elaborate moulded work or carved detail; and in practical building it has to give way to the soft, easy-working sandstones. But our Devonshire limestones show to best advantage when used for highly decorative work, where polished surfaces and rich colouring are required. The beauty of colouring and marking are, in the author's opinion,

unsurpassed by any other stone brought into the market. The demand for these marbles of Devonshire is very much on the increase, so greatly and universally are they admired. Scarcely a single modern church, having pretensions to elaboration of finish, can be found in which these marbles are not introduced. There is, however, one drawback to their use—they will not retain polish out of doors, the carbonic acid of the atmosphere having a strong affinity for the limestone, chemical action takes place, and the smooth, polished surface rapidly becomes disintegrated. The same remark applies to some extent even indoors, especially where gas is used. This may, however, to a certain extent be overcome by varnishing the polished surface; but it requires to be renewed from time to time. This mode of treatment has been lately adopted (the author thinks at his suggestion) on the outside of All Saints' Church, Babbicombe.

The circumstance of these marbles being very rich in marking and colouring, precludes the use of much moulding; in fact, it will be observed that where polishing is adopted, mouldings lose half their value. This doubtless is due to shadow being lost in the deep, rich colouring and veining; for it must always be borne in mind that the only value of mouldings as a decorative feature is to produce shadow and play of light and shade. This remark applies to all polished surfaces more or less; for the effect of the mouldings even in white polished marble is to a great degree neutralized by the reflected lights. The best treatment of polished surfaces, especially in such dark mottled and veined marbles as Devonshire produces, seems to be flat, even surfaces. Comparisons are generally odious; but to illustrate the point, let me ask you to compare the moulded columns of St. John's Church, Torquay, with the simple cylindrical shafts of All Saints', Babbicombe, and then judge; remembering at the time how much labour and expense is saved by the treatment of the latter.

There is another mode of treatment (which the author has before suggested, but which has not been followed up to any extent) the material admits and amply repays; viz., what may be styled parcel polishing. The process is as follows: The whole surface is first completely polished; after which decorative features in foliage, lettering, geometrical and flowing patterns, are traced out, and the ground (or the pattern) is then finely chipped away with a point, the result being that two colours are produced, the chipped surface being a warm or cold grey, according to the stone, and the polished surface

producing a deep rich tone of colouring in contrast. This treatment can only be adopted in dark marbles. Carved work in Devonshire marble is quite labour thrown away; but if adopted (either in dark or white marble), should never be polished.

Limestone fit for lime is very abundant; that found at Harbertonford and Okehampton possesses hydraulic qualities; *i.e.* it sets under water.

TRAPSTONES.—The trap rocks of our county yield some very beautiful building stone. It may be seen both in ancient and modern buildings about Exeter, and in other parts of the county. The chief quarries are in the neighbourhood of Dunchideock and Pocombe, on the road from Exeter to Okehampton. The stone generally selected is a rich, warm, red-brown, with white markings. It looks well both roughly “spalled” or “nobbled” (that is, brought into form by simply hammering off chips), and when finely tooled; but the rich colouring is much better retained by the former treatment, as the chisel or point bruises the surface, and leaves a white or light mark.

The green stones are not much used for building purposes, in consequence partly of their scarcity, and partly because of their excessive hardness. The green stone of Blackhead, near Anstis' Cove, is a beautiful stone, but far too hard to be used for building. Small outcrops are found in many parts of the county; but the use of the stone is confined to road mending.

SANDSTONES.—Though Devonshire abounds in red sandstone, it is but seldom it can be used for exposed masonry, on account of its softness and inability to stand the effects of weather. The conglomerates, however, are largely used throughout the county; and very beautiful is the effect. In our own immediate neighbourhood, Paignton Church may be mentioned as a building in which it has been used; but till lately the masonry has been covered up (as in many other places) with stucco, to prevent wet drifting through the walls. Occasional blocks and veins of a very good hard red sandstone are met with throughout the county, which appear to be the filling in of dykes. When thus found, it is generally exceedingly hard and close-grained. Examples may be seen near Waddeton Court, on the Dart, and in the limestone of Berry Head. Workmen have told the author that they would far sooner dress granite than this stone, so quickly does it turn the edges of their tools, and so great is the labour attending working it. At Ugbrook Park, near Chudleigh, the seat of Lord Clifford, a warm red-coloured sandstone exists,

which has been used by his lordship, but beyond his own buildings is little known. If brought into the market, there is no doubt it would be very largely used; for it is in every respect a most excellent material for architectural dressing.

A similar stone, but varying in colour from a dirty buff or drab to pure white, is quarried in the neighbourhood of North Tawton, Sampford Courtenay, Exbourne, and Hatherleigh. It is a very good stone for architectural purposes; but is somewhat difficult to obtain. Oaklands House, at Okehampton (— Holley, Esq.), the vicarage at Okehampton, and other buildings in the neighbourhood, are built with this stone. It is surprising that its use is almost confined to the immediate locality, now that there is easy railway communication with the district. At Beer, between Sidmouth and Axmouth, there is a quarry of stone which has been worked for a very long period; and there are few churches on the south side of the county in which it has not been used. Exeter Cathedral is largely built with it on the inside. It is nearly white, and chiefly composed of carbonate of lime. When first quarried it is (as is generally the case with similar materials) somewhat soft, and easily worked, from the presence of the water disseminated through the stone; becoming hard when this water has been evaporated by exposure. The chief quarry is subterranean, and extends a long distance into the hill, the roof being supported by large pillars formed by portions of stone left standing.

This stone was largely used at Torre Abbey in some of the oldest, as well as the later works, and is now almost as fresh as when placed there.

ROOFING SLATES.—The slates of Devon are not much used for roofing at the present time, Delabole (in Cornwall) yielding so much better in quality and durability. Quarries have been worked with more or less success near Ivybridge, Ashburton, and between Brixham and Kingswear (Nethway), and some few other places, but are little known. Those persons who have used Devon slates well know, to their cost, that they frequently become so soft, by the action of the weather, that the blade of a knife may be readily passed through them. Within the last twelve months a quarry has been opened at Buckland, near Kingsbridge, and is now yielding roofing slates and slabs of a superior quality. Slabs containing as much as 200 feet superficial have been quarried. The slate closely resembles that from Delabole, but is somewhat lighter in weight per cubic foot. The proximity to the Kingsbridge river affords great facility for water carriage, which will

enable the proprietors of the quarry to compete successfully with Delabole.

CLAYS.

The clays of Devonshire form an important item in the products of the county. Comparatively few bricks are made and used owing to the readiness with which stone of some sort or other may be obtained, but very good bricks are made both from the red and white clays. The neighbourhoods of Exeter and Torquay furnish a good quality; the pits at the former place being near Heavitree, and appear to be a deposit from trap rock found there. The Torquay brick-fields are situated between the Newton and Teignmouth roads; but the staple clay of Devon, as it may be termed, is the white or pottery clay, which is raised and exported in very large quantities. Very good clay is frequently derived from the Devonian beds of shellate, but for brickmaking it is not so good as that derived from the granite and sandstones. Bricks, tiles, and agricultural drain-pipes are also made in the neighbourhood of Copplestone.

These white clays appear to be the result of the disintegration of the granite, which has been deposited in the valleys by the action of water. The best known deposit in the neighbourhood commences on the low land under Heytor, and extends across Bovey and Knighton Heathfields, round about Kingsteignton and Newton, and extending even as far as Lawes Bridge, near Torquay, which has given rise to the supposition that, at some remote period, the valley running past the Torre station to Torre Abbey Sands was the outlet of a river of some magnitude, and that Bovey and Knighton Heathfields, and the Decoy, near Newton, were once lakes.

There are important works for the manufacture of fire-bricks from this clay near Plympton, and they are also manufactured at Bovey and Aller, near Newton.

In the north of Devon, a few miles from Bideford, on the road to Torrington, at a place called Anneray, there are works for manufacturing sewer-pipes and fine goods from the white clay of the alluvium deposit near Wear Gifford.

Devonshire once possessed a very celebrated pottery at Plymouth, the ware of which was much esteemed, and is now largely bought by collectors. This pottery was transferred to Bristol in consequence, no doubt, of the cost of taking coal to Plymouth. Bristol ware is still in great repute, but to the uninitiated the value of it appears to be more in consequence of its scarcity than its beauty. As far as the

author is aware there are only two potteries in Devonshire at the present time; viz., that at Bovey, for the manufacture of white goods, and that at Watcombe, for red ware.

The Bovey manufacturers aim at making common useful ware rather than works of a fine-art character; while Watcombe, on the contrary, produces art-works rather than everyday ware. But though there is but one white ware pottery in Devonshire, there is a very extensive trade in the clay to the Staffordshire potteries. There are shipped from the ports of Dorset, Devon, and Cornwall over 60,000 tons of potter's-clay annually.

The clay is raised in cubes of about nine inches, cut from the bed and taken to the canal near Newton, from whence it is carried by sea to Runcorn, Anderton, and other places near the potteries.

The Watcombe clay is raised from the valley which runs from the Teignmouth Road to the sea at Watcombe, and the deposit appears to be very large. Borings have been made to a depth of 80 feet without passing through it.

Dr. Percy, of the Jermyn Street Museum, gives the following analysis: "The sample of clay in its moist state as received here contained 21·42 per cent. of hygroscopic water. The analysis of the air-dried clay gave as follows:

COMPOSITION PER CENT.

Silica	57·83
Alumina	20·55
Peroxide of iron	7·75
Oxide of manganese	(traces)
Lime	1·68
Magnesia	0·97
Potash	3·87
Soda	0·56
Carbonic acid	0·90
Phosphoric acid	(traces)
Organic matter (small quantity). }	4·39
Combined water	
Hygroscopic water	2·13

100·63

"It was also examined for sulphur and chlorine, but none was found.

"The silica (about 21·21), as is usual in clays, is partly in combination with the alumina, the remainder being present as fine sand. The hygroscopic water would be expelled at

about 212° Fah. The plastic nature of the clay depends upon the combined water (*i.e.* water in chemical combination with the ingredients of the clay), this is expelled on firing. As the clay is readily fusible into a black glass at a high temperature from the presence of peroxide of iron, lime, &c., it renders it unfit for purposes for which fire-clays are applicable. The clay appears to work up well, and when fired at a lower temperature has a red colour, and might be used for making terra-cotta and certain varieties of pottery. Specimens of the fired clay have been forwarded. As the amount of alkalis (potash and soda) appears to be somewhat large, three separate estimations were made which closely agree."

The origin of this clay is somewhat doubtful; for, unlike the other red clays of the neighbourhood, there is an entire absence of limestone pebbles, which seems to indicate that it is not derived from the washings of the conglomerate rocks adjoining. Large lumps of trap rock, however, are met with having a spongy or honeycombed appearance. Mr. Etheridge, of the School of Mines, says these trap pebbles (if such they may be called) are closely analogous to the trap rocks near Exeter (already referred to), and that he knows no nearer point at which they are attainable.

The importance of the Watcombe deposit may be judged of from the fact that upwards of £10,000 value of art manufactures were produced last year from it, and the demand is greatly increasing.

The revival of the use of terra-cotta for architectural dressing in lieu of stone has greatly increased of late years, especially in London, where the smoky atmosphere tells so injuriously upon soft stones; the advantage over stone being that the surface is impervious to moisture, and dust is washed off by every heavy shower, and the surface may be cleaned at any time with a hose and jet of water. Those of my audience who have visited Milan, Padua, Turin, Venice, and other towns of North Italy, will remember how largely red terra-cotta was formerly (and has been lately) used for architectural purposes. The Watcombe terra-cotta is precisely similar in colour to the Italian ware, but is finer in grain. The best example of the use of the Watcombe terra-cotta for architectural purposes is, perhaps, the Economic Assurance Office, in Bridge Street, Blackfriars, where Mr. Christian, the architect, has used it as dressings to red brick-work precisely as used to be the manner in the old Italian work. There are but few examples at present in this neigh-

bourhood, but it may be seen at the Cary Hotel, opposite Cany Green, and in a few other places.

The terra-cotta used of late years in London and other parts of the kingdom (notably in the New Albert Hall, Kensington, and the School of Art, and the New Dulwich College) is a ware manufactured from Devonshire and Cornish clay mixed with ground flint, Cornish granite, sand, and old potsherds of like material: this produces a cream-coloured ware. If the colour is required to be of a warm stone-hue, clay, or marl from the oolite beds of the coal-measures, is used to brighten the mixture, also sands containing protoxide of iron. For brown or chocolate bodies, red clay is combined with manganese, with Dorset clay, flint, &c. Glazes are prepared from "frits" composed of Cornish granite, flint, red lead, soda, and borax; to these "frits," after grinding, is added white or red lead, flint glass, and Cornish granite.

The proper admixture of the ingredients, and the art of burning properly, are the secrets of the manufacturers, which, like most other things, are only obtained by patient persevering experiments and practical experience.

It is claimed for terra-cotta that the same art feeling and the "artist's touch" can be given to it as it can be to stone; for though the material may be cast in a mould, it is capable (unlike cement and plaster) of receiving, in the plastic condition in which it comes from the mould, any amount of hand finish and undercutting, which removes the stiff, lumpy effect which cast forms usually have.

COAL

The best-known deposit of coal in the county is the bed of lignite at Bovey. It appears to be an imperfect, or only half-developed coal. On the geological map it is shown as extending from the north-west of Bovey Tracey, skirting Ilsington on the west, Ugbrook on the east, and running between Highweek and Kingsteignton down to Kingskerswell. Does not this confirm the lake theory of that neighbourhood before mentioned? This coal is said to have been first used early in the last century. Dr. Maton described these beds of lignite in 1797 as being from four to sixteen feet in thickness, alternating with clay; and stated that the pits were about eighty feet deep, and worked for the supply of a neighbouring pottery. It appears that two potteries have been established near Bovey Tracey; one at Indio, and another close to the pits—the former in 1772, and

the latter about 1812. The smell from the burning of this lignite is very offensive; but it is little, if at all, used now at the pottery.

De la Beche mentions "beds of anthracite, which stretch across the county from Barnstaple Bay, by Bideford and Alverdiscott, towards Chittlehampton," as having been known for a long time.

Vancouver notices a bed, varying from four to twelve inches in thickness, near Chittlehampton.

According to Lysons, culm or anthracite was extensively worked in the parish of Tawstock in the middle of the last century. The pit was re-opened about 1790, and again abandoned, on account of the water, in 1800, when the depth of the pit is stated to have been twenty-five fathoms, and the quantity of anthracite thrown up equal to 900 bushels per week.

In 1838 culm or anthracite mines were worked at about a mile on the east of Bideford. Sufficient anthracite was at one time raised near Greenacliff, in Barnstaple Bay, to burn with the limestone brought there from South Wales.

Here and there these anthracite seams have been detected in other parts of Devon; as on the north side of Barnstaple, near Ashburton and Totnes; and a bed six inches thick was cut through near Cullompton when the Bristol and Exeter Railroad was made.

ROAD MATERIALS.

If we are to judge of the capabilities of the county for supplying road materials (or, as it is technically called, metalling) by the general condition of Devonshire roads and lanes, we should say they were very poor indeed; for there are perhaps few places where they are worse. But this is not altogether due to the materials forming them, but to the careless, slovenly way of using them.

The essentials requisite for securing a good road are:

1. Thorough subsoil drainage.
2. A firm foundation.
3. Such a form as will allow wet to run rapidly off.
4. A good tough surface-metalling.

The granites and elvans of Devonshire are not, as a rule, good materials for roads, as the felspar rapidly crumbles, and turns to dust and mud; and the best stone is really too hard to form a pleasant road; for it is not simply hardness which constitutes good metalling, but toughness. A road formed

of very hard stone becomes "knobby," presenting a series of small points standing up above the general surface. Many of the roads around London, which are chiefly coated with granite (though not from Devon), possess this disagreeable "knobby" feature, which is not only very unpleasant for vehicle travelling, but dangerous to horses liable to trip. Granite is also an expensive material for road-mending on account of the cost of transport. The same remark applies in a greater degree to the greenstones; they generally possess the advantage over granite of excessive toughness combined with hardness, but have the disadvantage of great cost in breaking up. The author some time ago tried the effect of using the greenstone from Blackhead for road-making, it was very expensive in the first instance, as the cost for breaking was more than twice as much as limestone; but it proved very durable and clean. It did not, however, form a pleasant road for wheel travelling, from the circumstance just named; it made a "knobby" road.

The greenstone obtained near Greenway, on the Dart, has been long used for the metropolitan roads, its value being in its great toughness.

Many of the trap rocks furnish admirable road materials, possessing the requisite qualities of moderate hardness combined with great toughness and grittiness. Roads made with this material are generally hard, clean, and free from slipperiness.

The upper greensand flints of Haldon and Milber Down afford good road materials, though to a certain extent they have the same fault of too great hardness; but this is somewhat compensated by the compact matrix which the sand and clay form for the flints, and the absence of mud.

The shellates, sandstones, and conglomerates are wholly unfit for road material, though frequently used where it is difficult to obtain other stone. They rapidly disintegrate, and become mere mud.

The best limestone (*i.e.* that which is obtained from quarries, and not mere surface-stone) furnishes admirable road-metalting if properly treated. It is tough without being too hard, and makes a very pleasant road for vehicle travelling. It has, however, one fault, and perhaps only one; it is apt to get slippery in wet weather. This, however, may be rectified by a judicious admixture with flint sand; the best mode of application being to place a layer of flint sand over the limestone, and consolidate the whole with a heavy roller. By this means a matrix is formed for the limestone, which pre-

vents the rolling of the stones, and wearing off the sharp angles; and the grit of the sand gets rid of the slipperiness, and prevents mud.

Such a mode of road making and mending may appear at first sight very expensive. The first cost is no doubt heavy; but the ultimate economy is very great. One of the finest roads the author remembers ever to have travelled over is the Great Holyhead Road, as it is called, in Wales. This road was constructed on the principles laid down at the beginning of this section. On one occasion the author was sitting by the side of the driver of a coach which used to travel over this road, and remarked to Jehu its excellency. "Yes," said he, "it is a thorough good road, sir. It was laid out and made under the direction of *Serjeant Talfourd*" (meaning, of course, the engineer Telford).

NOTES ON A TOOTH OF MACHAIRODUS LATIDENS IN THE ALBERT MEMORIAL MUSEUM, EXETER.

BY W. PENGELLY, F.R.S., F.G.S., ETC.

(Read at Torrington, July, 1875.)

ON the 11th June, 1875, I received the following letter from Mr. W. S. M. D'Urban, of the Albert Memorial Museum, Exeter:—

“Devon and Exeter Albert Memorial Museum and Free Library,
Exeter, 10th June, 1875.

Dear Sir,—As you take so great an interest in all that relates to Kent's Cavern, I think you may like to know that we have in this Museum a left upper? external incisor tooth of *Machairodus latidens*. It agrees in every respect with the figure in Owen's *British Fossil Mammals*, and also with those in the Palæontog. Soc. Publications (*Pleistocene Mammalia*). I have shown it to several eminent anatomists and palæontologists, who all agree it can be nothing else than a tooth of *Machairodus*. It came from the collection of the late Mr. F. W. L. Ross, of Topsham, who purchased it and other teeth and bones from Kent's Cavern from Mr. W. C. Radley, of Newton Abbot, who bought them at the sale of the effects of the Rev. J. Mac Enery. I have all the correspondence between Mr. W. C. Radley and Mr. Ross. Ten years since, I thought this tooth must be one of *Machairodus*, but had then no figure to compare it with. Not long ago I was arranging and naming our small stock of Kent's Cavern fossils and comparing them with the figures in “*Pleistocene Mammalia*,” and then I felt sure of it. Having read your paper in Trans. Devon. Assoc., and finding that no more than three had been found, I was unwilling to say anything until I had shown it to some good authority. Mr. Davies of the British Museum, Mr. Etheridge, and Professor Flower have all seen it, and

have no doubt about its being an incisor of *Machairodus*. I am not certain whether it is upper or lower, but I think the former. If not one of the two you mention, and if it was not from some other locality, then three must have been found in Kent's Cavern by Mac Enery, making four in all.

Yours faithfully,
(Signed) W. S. M. D'URBAN,
Curator.

To W. Pengelly, Esq."

I at once wrote Mr. D'Urban, thanking him for his kind letter, and congratulating him on the discovery as well as the possession of the incisor. Being somewhat busy at the time, I named the following Wednesday as the day on which I hoped to visit Exeter to see the tooth, and expressed the hope that I might be allowed to take a copy of the correspondence between Mr. Radley and Mr. Ross, with a view to its publication.

Accordingly, I went up on Wednesday, 16th June, and at once saw that the tooth was an undoubted and, indeed, a fine specimen of an incisor of *Machairodus latidens*.

Mr. D'Urban, in the handsomest manner, placed the correspondence in my hands with the fullest permission to take a copy. It consists of four short letters from Mr. Radley to Mr. Ross, having, on the fly-leaf of the last two, rough copies of Mr. Ross's replies. As they contain matter irrelevant to the subject of this Note, I purpose confining myself to those parts which have a possible bearing on the tooth.

Letter (1) from Mr. Radley to Mr. Ross:—

"Newton Abbot,

January 18, '53.

Sir,—Single handed, in daily and hourly occupation, I have deferred a reply to your esteemed favor until some observations could be made. I was one of those who attended the [sale of the] late Rev. Mr. McEnery's reliques, and what he valued most was a sucking tooth or milk tooth of an elephant calf, which he valued in £10, and kept wrapped in cotton.

Mr. Konig of the British Museum was the great purchaser at that sale, and might be said to have the nation's purse. Others were dug at Chudleigh caverns, and some from Anstey's Cove, Torquay, as well as Kent's Cavern, where the bulk of the Torquay effects came from.

The value, at a very moderate reckoning, of those sent is

£7; and considering no more can be obtained, I beg to leave them to your decision.

* * * * *

With much respect,

I am, Sir,

Your very obedient Servant,
(Signed) W. C. RADLEY.

F. W. L. Ross, Esq."

Letter (2) from Mr. Radley to Mr. Ross:—

"Newton Abbot,

January 20, 1853.

Sir,—I am obliged by your favour just received, and in stating £7, said they are worth that sum, which you say is 'rather beyond.' Now oblige me by saying what sum is more in accordance with your view, as they will be more at home and in place with you in a museum than in private with me. Referring to my letter, I left it open to your decision, and not offended at all in being offered what they are worth to you, not knowing any party just now to take them.

* * * * *

Your obedient Servant,
(Signed) W. C. RADLEY.

F. W. L. Ross, Esq."

Letter (3) from Mr. Radley to Mr. Ross:—

"Newton Abbot,

January 28th, 1853.

Dear Sir,—I feel obliged for your candour, but cannot take it. The worst tooth at Mr. McEnery's sale brought a shilling. Mine are 57 specs., and 2s. each is a low value for the whole, as they are well laid out fit to handle. I will strike off 5s. from £6, if that shall please, being £5 15s. If you will not buy, pray let them be securely packed and sent to the *Plymouth Inn*, St. Thomas's, Exeter, for Foale the Kingsbridge carrier to bring on, though they would be a good addition to a museum.

* * * * *

Believe me,

Yours with esteem,
(Signed) W. C. RADLEY.

F. W. L. Ross, Esq."

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Letter (4)—neither dated nor signed, but clearly from Mr. Ross to Mr. Radley:—

"Dear Sir,—According to your directions I this day return your specimens, and have no doubt if sold singly you could obtain the full price you require for them. I observe the teeth and fragments of Hyæna jaws are more numerous than the other animals, therefore are of less comparative value.

When they reached me (the box being too large) they were removed from their positions on the boards. I have packed them with great care, and think they will reach you better than if they had been replaced with cement. I am obliged by the opportunity afforded me of comparing them with Dr. Buckland's plates in his *Reliquiæ Diluvianæ*.

* * * * *

Letter (5) from Mr. Radley to Mr. Ross:—

"Newton Abbot,

November 16, 1853:

Sir,—I have been informed of your safe return, as well as previous absence, or should have addressed you before to repeat an observation in my former letter, that the Fossils of Kent's Cavern are quite out of place with me, having nowhere to deposit them where they might be seen to advantage. I therefore, out of regard to the effort you have made in establishing a museum accessible to the public, offer them at your own price, observing that they have never been offered to any one but yourself, and that the box remains nailed up as you sent it.

* * * * *

I beg my respects,

And remain your obedient Servant,

(Signed)

W. C. RADLEY.

F. W. L. Ross, Esq."

Letter (6)—neither dated nor signed, but clearly from Mr. Ross to Mr. Radley:—

"Sir,—The state of my health will I fear preclude my ever feeling much more interest in my museum, nevertheless I will take your fossil remains at the price I proposed, which I think was three pounds.

I go to town, I believe, next week to consult Dr. Bright, therefore the affair must be settled previous to my leaving home.

I am, Sir, yours."

Proceeding from the correspondence to the specimen itself, I made the following notes whilst it was before me:—Its colour is very light and without any trace of discoloration, resembling in this respect the four upper canines of the same species found by Mr. Mac Enery in Kent's Cavern, and which I have examined in the British Museum, Museum of the College of Surgeons, London, Museum of the London Geological Society, and the Museum of the Geological Survey, Jermyn Street, London.* It differs in this particular from the incisor found by the British Association Kent's Cavern Committee, which is much discoloured.

It answers admirably, with two doubtful exceptions, to the following description given by Mac Enery of an incisor he found in Kent's Hole:—"In addition to the canines [of *Machairodus latidens* = *Ursus cultridens*], I have lately discovered in the same bed [as the canines], a small tooth *about an inch long*. The internal face of the enamel is fringed with a serrated border. This tooth is distinguished farther by two tubercles or protuberances at the base of the enamel, from which the serration springs and describes a pointed arch on the internal surface. *The body of the tooth in this specimen is not compressed, but rounded*. Whether this belongs to an inferior species of the *Ursus cultridens*, or is simply the incisor anterior to the canine of the large species of *Ursus cultridens*, I am not able to determine."†

The words I have italicised contain the exceptions spoken of.

1st. The Exeter specimen, instead of being "about an inch long," is rather more than two inches. Mr. Mac Enery, however, may not have measured his specimen, and may have under-estimated its length.

2nd. Waiving the question of what is meant by "*the body of the tooth*," and assuming that Mr. Mac Enery simply meant that his specimen was "not compressed" in the same remarkable manner as the canines, but was "round" in comparison with them, the fang is nevertheless more compressed and more angular than one was prepared to find it by Professor Owen's figure of an incisor found by Mr. Mac Enery,‡ and more also than the specimen found by the Kent's Cavern Committee of the British Association.§

* The fifth canine found by Mr. Mac Enery, and lodged in the Oxford Museum, I have not seen.

† See *Trans. Devon. Assoc.*, vol. iii. p. 370. 1869.

‡ See *A History of British Fossil Mammals and Birds*. By Richard Owen, F.R.S., F.G.S., etc. 1846, fig. 70, p. 182.

§ See *Report Brit. Assoc.*, 1872, p. 46. Also, *Trans. Devon. Assoc.*, 1872, p. 179.

The Exeter incisor has lost the extreme point or apex of its crown.

There are no traces of teeth marks on it, but it must be observed that it has lost a portion of the surface on one side of the fang, obviously since its exhumation. The aspect of the scar suggests that the specimen had been fastened with strong cement to a tablet, and that it had been roughly detached, whereby a portion of the exterior of the fang was torn off. This is borne out by the passage in Mr. Ross's letter (No. 4):—"When they reached me . . . they were removed from their positions on the boards."

There is firmly attached to the fang a very small bit of paper, apparently a remnant of a label, bearing, in written characters, the letters "ear," probably the last three letters of the word "Bear," of which the "B" has been torn off. I have no doubt that the letters are in the handwriting of Mr. Mac Enery, and, though the evidence must be confessed to be slender, I would observe that the transcription of every word of the manuscript of his "Cavern Researches," when preparing it for the press, and which occupies 280 pages of the third volume of our *Transactions*, necessarily made me very familiar with his penmanship. Moreover, he, following Cuvier, supposed the animals forming the extinct genus *Machairodus* to be *bears*, and described the Kent's Cavern species as *Ursus cultridens*, and applied to it the name of *Bear*.

The following measurements show the dimensions of the Exeter incisor (E), and also of that found in Kent's Hole by the British Association Committee (B).

	Actual.		Relative.	
	E Inches.	B Inches.	E	B
1. Length, in a straight line, from vertex of crown to base of fang.	2·05	2·12	96	100
2. Length, in a straight line, from vertex of crown to top of tubercle on concave side	·65	·76	86	100
3. Length, in a straight line, from vertex of crown to top of tubercle on convex side	·63	·70	90	100
4. Length, in a straight line, from top of tubercle to base of fang on concave side	1·30	1·40	93	100
5. Length, in a straight line, from top of tubercle to base of fang on convex side	1·58	1·65	96	100
6. Greatest thicknesses of fang	·63×·40	·64×·43	98×93	100×100

The foregoing figures show the following facts:—

1st. That the Exeter tooth is in every respect a rather smaller tooth than the British Association specimen.

2nd. That the defects, instead of being constant or nearly so, vary from 2 to 14 per cent.

3rd. That the fang of the Exeter specimen is somewhat more compressed than that of the other, the transverse diameter being as $63:40 = 100:63\cdot5$ in the former, and as $64:43 = 100:67\cdot2$ in the latter.

The statements just made suggest a few questions requiring and deserving attention:—

1st. There can be no reasonable doubt that the incisor really formed part of Mr. Mac Enery's collection. There is in existence a sufficiently circumstantial correspondence, showing that Mr. Radley bought a series of specimens at the sale of Mr. Mac Enery's effects, and that he sold 57 of them for the sum of £3 to Mr. Ross, of Topsham, who possessed a large collection of curiosities. It is well known that, mainly through the agency of my friend Dr. Scott of Exeter, Mr. Ross's collection was, after his death, presented to the Devon and Exeter Albert Memorial Museum. When received there, a set of specimens, professedly the Mac Enery series, was found to form part of the collection, and to contain, as one of them, the incisor in question, having firmly attached to it a bit of paper bearing a portion of a word which, in the opinion of one certainly familiar with his penmanship, is in Mac Enery's handwriting.

2nd. Mr. Radley's first letter (No. 1) conveys the idea that he had reason to believe that though the bulk of Mr. Mac Enery's specimens were from Kent's Hole, some of them had been obtained from the cavern at Chudleigh, and others from that at Anstey's Cove, near Torquay. Mr. Radley, who, in addition to carrying on the profession of a surgeon, kept a shop for the sale of drugs, and was a dealer in local fossils, is said to have been a nocturnal explorer of the cavern known as the "Piksy's Hole," at Chudleigh, and may have supplied Mr. Mac Enery with specimens obtained thence. He may, however, have been well acquainted with the extent of Mr. Mac Enery's cavern researches, and assumed that all the caverns he named were represented in the collection. Be this as it may, it is eminently improbable that the specimens found in the different caverns possessed characters by which they could be distinguished from one another by Mr. Radley,

and I have a distinct recollection that very few of the specimens were so labelled as to show their localities at the sale of Mr. Mac Enery's effects, at which I made a few purchases.

It is well known that Mr. Mac Enery conducted investigations, not only in the caverns named by Mr. Radley, but also in some of those at Buckfastleigh. Happily he left accounts of those labours, the whole of which have been recently published. When it is remembered that he was fully aware of the interest attaching to the teeth of *Machairodus latidens* which he had found in Kent's Cavern, and keenly alive to it himself, it can scarcely be doubted that had he met with anything of the kind in either of the other caverns, he would have been eager to record the fact; but nothing of the sort is to be met with in his "Researches." With the exception of Kent's Hole, of course, the only cavern which yielded him any specimens worthy of note was that at Anstey's Cove; and the teeth he met with there were a bear's molar, large bear's tusks, one tooth of a young horse, a few resembling canine teeth of hyæna, numerous small teeth, a dozen or more fox's tusks, and a deer's jaw exhibiting a second set of teeth shooting up under the old.* The only teeth in this list that could by any possibility include an incisor of *Machairodus* are those "resembling canine teeth of hyæna," but as Mr. Mac Enery had carefully noted and minutely described the very remarkable characters of the incisor which he found in Kent's Hole, it cannot be supposed that he could have overlooked such a striking specimen as that now enriching the Exeter Museum. If it did not *astonish*, it would greatly *amuse* one to think of the keen-eyed Radley and the diligent Ross handling this specimen from time to time without their attention being rivetted on its two strangely serrated edges. "57 specimens," says the former, "and 2s. each is a low value for the whole, as they are well laid out and fit to handle." Indeed, it was a low value, Mr. Radley, especially as one of the 57 was unique so far as British palæontology was concerned. And yet the whole lot seems to have fetched no more than three pounds, and the remarkable incisor had to wait 22 years subsequently for recognition!! Mr. Mac Enery's discoveries at Chudleigh seem to have been so very meagre as to have given him no chance to overlook such a relic as the Exeter tooth; and he closes the narrative of his investigations at Buckfastleigh with the remark, "We soon found at Buckfastleigh of the existence of fossil remains there did not appear the slightest hope." In short, there seems to

* See *Trans. Devon. Assoc.*, vol. vi. p. 63. 1873.

be no doubt that if the specimen was found in a Devonshire cavern, it was in Kent's Hole.

3rd. Whilst it must be admitted to be far from improbable that Mr. Mac Enery's collection contained specimens from localities beyond Devonshire, and even beyond Britain, it should be remembered that remains of *Machairodus* were so extremely rare up to 1841, when he died, as, indeed, they are still, as to render it most unlikely that he was the possessor of one of the very few teeth found on the continent, as well as being the discoverer of all that had been met with in Britain. In short, though demonstration is out of the question, my conviction is that the incisor now under consideration was found by Mr. Mac Enery in Kent's Cavern; that it was purchased at the sale of his effects by Mr. Radley, of whom it was subsequently purchased by Mr. Ross, neither of the two latter being aware of its true character; and that it was presented by Mr. Ross's representatives, with the bulk of his collection, to the Devon and Exeter Albert Memorial Museum, where it now remains.

4th. We know that Mac Enery found a tooth in Kent's Cavern, which from his description was, as he apparently suspected, an outer upper incisor of *Machairodus latidens*; that Professor Owen figured and described an incisor of that species, which he said was found in Kent's Hole, by Mac Enery; that no one knows what has become of *them* or *it* as the case may be; and that an upper outer incisor of the same species, bought at the sale of Mac Enery's effects and finally lodged in the Exeter Museum, answers closely to the description Mac Enery gave of his specimen—the two very doubtful points being waived; but whether any two, or all three, of them are identical it may be very difficult, perhaps impossible, now to prove. For myself, I confess to the belief that the three specimens are one and the same, notwithstanding the facts that Professor Owen describes his as belonging to the *right* side, whilst the Exeter tooth belongs either to the left side or, what from its size is not likely, to the under jaw; and, that the measurements of his figure 70, page 182, in the "British Fossil Mammals," do not quite agree with those of the Exeter tooth. There can be no doubt that if it were an actual tooth on Professor Owen's page 182, instead of the *figure* of one, it would be a *right* upper outer incisor, but, unless the artist drew from a reflexion of the specimen instead of from the specimen itself, the figure would be

reversed on being printed, and hence the tooth would be from the *left* side—that to which, as already stated, the Exeter tooth belongs, if, as is most probable, it is from the upper jaw. Dr. Burmeister takes it for granted that this reversal has taken place, since he says, "The incisor which Owen illustrates is decidedly an upper outer on the left side."* In short, I very strongly suspect that Professor Owen assigned the incisor to the wrong side.

The difference in the measurements of the Exeter tooth and of Professor Owen's figure may probably be dismissed as errors of the draughtsman or engraver, such as appear to be not unusual. Thus, for example, there are in Sir Charles Lyell's "*Antiquity of Man*" three figures of the incisor of *Machairodus latidens*,† found by the British Association Kent's-Cavern Committee, on 29th July, 1872, and, whilst no two of them are of exactly the same length, the longest of them is .07 inch shorter than the original.

I may be reminded, however, of the following passage in the "*British Pleistocene Mammalia*," by Messrs. Boyd Dawkins and Ayshford Sanford:—"The incisors of *Machairodus latidens* are now only known to have been found in Kent's Hole by three figures of the natural size in a lithograph which is deposited in the Museum of the Natural History Society of Torquay. The accompanying woodcuts [Figs. 1, 2, 3, p. 188] have been drawn on wood from a photograph of the original, which has been placed at our disposal through the kindness of the Society, and fig. 1 representing the inner aspect of the left upper incisor, 3 *is that which has been copied by Professor Owen*." There can be no doubt that this passage, both in its opening sentence and in the words I have italicised (which are not printed so in the original), conveys the idea that Professor Owen's figure was not drawn from the actual specimen, but was a copy of one of the figures in the "lithograph." This I am persuaded is an error.

On turning to his "*British Fossil Mammals*," it will be found that Professor Owen, who mentions the incisor and refers to his figure on page 177 and again on page 182, neither makes any acknowledgment of having copied the figure from any drawing or plate—which it can scarcely be

* "Bericht über ein Skelet von *Machairodus*, im Staats-Museum zu Buenos Aires von Dr. Herm. Burmeister." Halle, Druck und Verlag von H. W. Schmidt. 1867. p. 12.

† See "*Antiquity of Man*." By Sir Charles Lyell, Bart., M.A., F.R.S. Fourth Edition, 1873, Fig. 10. a, b, c, p. 106.

supposed he would fail to do—nor says that it was drawn by or for him from the specimen itself. Nevertheless, he speaks of the “sharp edges” of the tooth, of their being “strongly serrated,” of its “obtuse consolidated fang thickly coated with cement” in such a way as to imply that the specimen was before him.

But to return to the “lithograph.” The facts are as follow:—In 1869, Mr. Gardner of Torquay presented to the Natural History Society of that town a considerable number of plates, which he had received from the late Mr. Kilby, also of Torquay, with the statement that they had been the property of Mr. Mac Enery, whose executor he was. The present consisted of plates representing Kent's Cavern specimens, plates which certainly had nothing to do with that Cavern, and one *drawing*, the so called *lithograph* in the passage quoted above. The *drawing* contains five figures—two, of parts of horse, the remainder being three different aspects of two incisors of *Machairodus latidens*. Beyond the mere facts that the *drawing* was probably Mr. Mac Enery's property, and that it contains representations of remains found perhaps in *some* cavern, there is nothing whatever to connect the specimens figured in it with Kent's Hole or any other locality, for the only words on it are “J. Scharf del 1837.” This *drawing* is certainly never referred to by Mr. Mac Enery in any part of his “Cavern Researches,” at least some parts of which he wrote as late as 1836, as he quotes Dr. Buckland's *Bridgewater Treatise*, published that year. When describing the *Machairodus* canines he had the good fortune to discover, he remarks that “they are all gnawed at the base;” but minute as is his description of the incisor he found, it contains no mention of teeth marks. This is the more noteworthy, as he constantly dwells on this point, it being one much discussed during his era. A glance at the *drawing* under notice, however, shows that the incisors represented in it had their fangs scored with teeth-marks on every side.

On comparing Professor Owen's figure with those in the *drawing*, the first thing that struck me was that if he copied either of the latter, it could not have been Fig. 1. as stated, but must have been Fig. 2, as the former has not, but the latter has, the same aspect as his. Secondly, that the copying must have been so wretchedly done as to omit altogether the important marks of gnawing already mentioned—a fact which of itself satisfies me that there was no copying at all, and that the figure in the “British Fossil Mammals” represents the Exeter tooth, which has not been gnawed, but not either

of those of the *drawing*, come whence they may, each of them having been gnawed.

On turning to the chronology of the question, we find, at least, strongly corroborative evidence in favour of the conclusion already arrived at. In 1842, Professor Owen presented his "Report on the British Fossil Mammalia, Part I," to the British Association. This appeared in the annual volume of that body for the year just mentioned, but was printed in 1843, and contains the following passage:—"The most remarkable fossils of the Ursine family which have been found in this country, are those of the *Ursus cultridens*, or at least of a species closely allied to that from Auvergne and the Val d'Arno; the singularly compressed and serrated canines of which suggested to Cuvier the specific name above quoted. The evidence of this species, since made the type of a distinct sub-genus under the names of *Machairodus* and *Stenodon*, which British localities have afforded, consists of detached canine teeth found in Kent's Hole. These are larger and broader in proportion to their thickness, and have shorter fangs than the Auvergne tooth figured in the '*Osteography*' of M. de Blainville. The crown of one of the canines of the *Ursus cultridens*, from Kent's Hole, measures $2\frac{1}{2}$ inches; the fang of a second canine, with the apex of the canine [? crown] worn down, is $2\frac{1}{2}$ inches in length; the breadth of the base of the crown is 1 inch 2 lines; its thickness is half an inch.* In 1842 I made the following remark on the passage just quoted:—"It is obvious . . . that Professor Owen had seen and measured at least two of the canines from Kent's Hole; but as he makes no mention of an incisor, it may perhaps be concluded that he was not at that time aware of the existence of any such specimen."† In 1846 he published his "British Fossil Mammals and Birds," when he described and figured the incisor in question; and, as the work was published in parts appearing at intervals, and the section on *Machairodus* occupies pages 174 to 183 in an octavo volume of 560 pages, it seems safe to conclude that he obtained his materials respecting the incisor, neither earlier than 1843 nor later than 1845. Now, Mr. Mac Enery died 18th February 1841, and his collection was sold and dispersed in the last week in March or the first in April 1842, when, at latest, the *drawing* so frequently mentioned, with many other odds and ends, became the property of his executor, Mr. Kilby, who was an excellent chief of police at Torquay, but without scientific

* "Report Brit. Assoc." 1842, p. 68.

† "Trans. Devon. Assoc." vol. v. p. 170. 1872.

tastes, or knowledge, or acquaintances, as such. It may be regarded as certain that the *drawing* never passed from him to Professor Owen or to any one else until he gave it to Mr. Gardner, who presented it, with numerous plates, some of them soiled and torn, and without any knowledge of its special existence, to the Torquay Natural History Society in 1869, that is 28 years after Mac Enery's death. From that time it may be said to have been in my keeping as Honorary Secretary of the Society; and its existence was first mentioned by me in a foot-note to page 370, vol. iii. "Transactions of the Devonshire Association," 1869. I feel no doubt whatever that so far from having copied either of the figures in it, Professor Owen has never seen the *drawing*, and that he had never heard of it before 1869, at the earliest.

Were it allowable to do so, I would suggest the following as the solution of the problem of Professor Owen's figure:—

The late Mr. Radley, a keen and well-informed dealer in fossils, attended the sale of Mr. Mac Enery's effects in 1842, and knew what, if any, palæontologists of eminence were present. In 1843, or 4, or 5, in the hope of securing a purchaser, he sent a selection of the fossils he bought at the sale, including the incisor of *Machairodus latidens* about which he knew nothing, to Professor Owen, or to some one acquainted with him, who did not attend the sale. In any case they came under Owen's notice, who obtained permission to figure any he thought fit; after which the specimens were returned to Radley, who in 1853 sold the same set to Mr. Ross. Their subsequent history has already been told.

4th. Guided by Mr. Mac Enery's statements, we know that he found five upper canines and one incisor of *Machairodus latidens* in Kent's Cavern. We also know that one of the five canines is in the British Museum; another is in the Museum of the College of Surgeons, London; another is in the Museum of the Geological Society of London; another is in the Museum of the Geological Survey, Jermyn Street, London; and the fifth and last is in the University Museum, Oxford. Finally, we have good reason to believe that the incisor is in the Devon and Exeter Albert Memorial Museum, Exeter. Besides the foregoing specimens, a right, upper, outer incisor was found in July 1872 by the Committee appointed by the British Association to explore Kent's Cavern, and has remained ever since in my keeping as Honorary Secretary of the Committee. Respecting the originals of the figures in the *drawing* so often mentioned,

there is nothing whatever to show where they were found or what has been their fate.

5th. There is nothing surprising in the fact that the Exeter specimen is somewhat smaller than that belonging at present to the British Association, for the five upper canines must have belonged to at least three individuals, and the incisors may therefore have belonged to different animals also.

P.S. The Committee of the Exeter Museum having been so good as to act on my suggestion that the incisor in their collection should be sent to Professor Owen, and he having kindly written me on the subject, I am enabled to embody in this Postscript the substance of his statement, which is as follows:—

1. That his figure of the incisor (Fig 70, page 182, "Brit. Foss. Mam.") was drawn for his work from an actual specimen, not copied from any other drawing.

2. That he has never seen the *drawing*, now the property of the Torquay Natural History Society, and had never heard of its existence until he read my paper. (*Trans. Devon. Assoc.*, vol. v. pp. 165–179. 1872.)

3. That the specimen he figured was, with several other teeth and bones, brought to him by Dr. Buckland, to whom they were returned.

4. That he does not believe it was brought to him before 1844.

5. That he does not know from whom Dr. Buckland obtained it.

6. That the Exeter specimen is a *left* upper outer incisor.

7. That he believes it to be the specimen he figured and described in his work.

RECENT CASES OF SUPPOSED WITCHCRAFT IN DEVONSHIRE

BY PAUL Q. KARKKK.

(Read at Torrington, July, 1875.)

DURING the discussion which followed on the reading of my paper, "Devonshire Witches," at Teignmouth last year, a member of the Association said that the belief was fast dying out. The following cases are now brought forward by way of showing that there are not as yet any signs of such an event as the belief in witchcraft disappearing.

I have been referred by Mr. E. Vivian, J.P., to the magistrates' clerk at Torquay, and that gentleman (Mr. Hearder) gave me the particulars of an application for a warrant made to the bench in May, 1875, by a poor old woman living at Chelston, near Torquay, who believed that her husband had died from the effects of witchcraft. I need hardly say that the application was refused.

In July and August last year a curious case took place in the vicinity of Ashburton, all the facts of which are well known to a friend who related them to me. A man and his wife in easy circumstances had been suffering from some trivial ailment for a short time, and not getting any great amount of benefit from their own and their neighbours' attempts to cure, began to suspect that they were bewitched. After some little doubt and discussion, they decided to call to their aid the white witch of Exeter. This individual was no sooner invited than he came, and I need hardly say did not attempt to disabuse their minds of their suspicions. He carefully examined the patients, went through some hocus-pocus, and finally pronounced their case to be witchcraft. His fee was four guineas, and for one guinea more they could look in a crystal and see the face of the witch whose malevolence had done them so much harm.

This brilliant offer was for certain reasons declined and neglected. The white witch then proceeded to give them some charms, which they were to repeat in a solemn manner, and at a prescribed moment; and finished up by saying that before twenty-four hours should elapse the witch should come and beg their pardon. This clever individual then departed, taking with him more money than his patients had ever paid a doctor in their lives, and which money, it is to be hoped, has acted according to the Irish proverb, "Ill got, ill gone." The couple, on being left to themselves, proceeded to carry out their instructions, which doubtless was done to the very letter. As usual, they retired to rest about nine o'clock, and in the fond hope that they should soon reap the benefit of the white witch's advice. They had hardly got into bed, when they heard some one knocking at the door; and the husband quickly opening the window, asked in an angry tone, "*Who's there?*" A poor woman who lived close by, and who knew the man and his wife were poorly, had, on coming home from her work in the fields, looked round to enquire how they were; but on being spoken to thus sharply, she perceived that her neighbours had gone to bed, and did not wish to be disturbed; so naturally enough looked up at the man, and said very politely, "*Oh, I beg your pardon,*" and went her way homeward. Here was the fulfilment of the white witch's prophecy. "Before twenty-four hours should elapse, the witch should come and beg their pardon." The next morning the neighbours were told of this, and the poor woman, who had simply performed a charitable action, found herself pointed at and abused, and but for the threatened interference of the police, would have been ill-treated. Doubtless the excitement on this occasion acted like a charm, for both husband and wife were cured, and hence were quite able to affirm that they haven't felt so well for years, and all through the white witch of Exeter.

The next case relates to the doings of another white witch, also belonging to the good city of Exeter, but in this instance a lady professor of the art. I give the story verbatim as reported in the *Western Daily Mercury* of January 28th, 1875.

REMARKABLE SUPERSTITION AT EXETER.

CONVICTION OF A FORTUNE-TELLER.

At the Exeter Guildhall yesterday Mrs. Arthurs, commonly known by the name of "Mother Arthurs," was brought up, in

custody under a warrant, charged with unlawfully professing to Elizabeth Heacock that she could tell fortunes, and with using certain subtle means, and devices, and cards with intent to deceive the said Elizabeth Heacock. The defendant, who is a stoutly-built elderly female, was dressed in attire of many hues, principally scarlet, and was defended by Mr. Friend. Much interest was manifested in the case, and the court was crowded. Elizabeth Heacock said she lived at 7, Fore Street, and was a widow. She did not know the prisoner, beyond having gone to her to have "the cards put out," but she knew she resided in Nelson Place. Witness had a son, who for some months had been very ill, and had suffered fearfully. Her neighbours told witness that it looked as if her son was suffering from some witch's spell. Witness then went to the defendant, and the latter produced the cards, and told the witness that she saw "great confusion." This was after she shook the cards, and before witness had told her anything, but the defendant averred that she "saw it all in the cards." She immediately produced the cards on the witness entering her house, and said she saw a deal of trouble in store for her, and gave it as her opinion that there was some one working wickedness against her son. The cards were ordinary playing cards. The defendant shuffled the cards, and then witness had to shuffle them, being told at the same time to think on what she wanted to know. Defendant declared that the person working all this wickedness was no one belonging to witness, but a short, dark-looking, stout woman was the cause of all the mischief. Witness paid her sixpence for that; but this was not a charge made by the defendant, but only what she gave her. Defendant, on her leaving, told her to come the next day, when she would search out "the book" for her. The next day she went again, and the defendant said that she could see that her son was very ill, and if he lingered on until July or August nothing could be done. (Laughter.) She then said "it would be very expensive," and when asked what "expensive" would mean, the defendant answered £2. Witness then went home and consulted with her son, and the result was that she did take the money to the defendant the following day. The defendant said that she was sure she should not be paid for her time; for the medicine would be very costly. Witness then paid the woman the money, and the medicine was handed over to her. The directions were that the son was to take a tea-cup full three times a day; and witness was told she must give it to him warm. The

medicine appeared to be sweetened with liquorice, and the whole being consumed by her son, the witness paid the defendant another visit. She then gave the witness a smaller bottle, which her son took in quantities of two spoonsfull; but he did not approve of the mixture, for it made him very ill. Witness again went to the defendant, informed her of the effect the medicine had produced, and was then directed that she was to let the patient rest for a few days. When the defendant consulted "the book" the witness had to pay her two shillings for it, and then the witness asked her, "Do you think you could do my son any good if I got the £2?" and the defendant replied that while there was life there was hope. (Laughter.) When the defendant produced the cards she shuffled them, and witness shuffled them; then they had to be cut, and witness was told to think on what she wished to know, and she did think accordingly. After the whole of the medicine was consumed witness once more went to consult the defendant. She again produced the cards, but before anything was done with them witness asked if she would have to pay for that. Defendant said, "Of course;" and upon that witness expressed her inability to pay anything further. When the defendant consulted "the book" she read out a great deal from one of the pages, much of what she uttered being said to herself; but the witness heard such things as this: If the son did not improve before July or August nothing could be done. Afterwards she said her son would live until 1876, but he would be a very great object. (Laughter.)

The Clerk: Did she tell you what your son was suffering from?

Witness: Oh yes. She said that he had a bad cough, and suffered from discharge. She said also he could eat and drink well, and she told me everything so true that I was induced to go further. (Laughter.)

The Clerk: Did she say that when the cards were before her, or when you were telling her about your son?

Witness: The cards were all placed out with their faces upwards. She could see great confusion with women and doctors. (Laughter.)

Mr. Friend: There is often considerable confusion with the doctors! (Laughter.)

The Clerk: Did she say anything about curing?

Witness: She said nothing about curing, but said there was confusion, and she would have to work hard for me. To the Bench: They do work by something, gentlemen, at

twelve in the day, and at twelve by night. (Laughter.) She did not tell me downright that she worked at those hours, but that is what they do. (Laughter.) As far as I was concerned myself she said I could face my enemies. (Laughter.)

Witness : She told me she had made wonderful cures with the deaf, the blind, and the lame. (Laughter.) She said she could see the poor fellow was very ill, and that his life hung on a thread. Witness told her she ought to have come and seen her son, but the defendant said that would have been useless. She said she could give her some more medicine, but that it would be very expensive, made of rum, &c., and that alder must be used. The first medicine the defendant said was composed of a foreign herb, and there were eighteen different ingredients in the first bottle.

Mr. Friend : And your son is not cured yet. (Laughter.)

Witness : No ; he was to rest a few days, and to take some cod liver oil ; and after he took it he had a suspicion that there was some further wickedness at work, and that the defendant had done this to put him aside.

Mr. Franklyn : Is he still living ?

Witness : Yes, and better than he was when taking her medicine. When she produced the cards I might cut up aces, spades, or trumps, you know. (Laughter.)

Mr. Friend : Is your son a married man ?

Witness : Yes.

Mr. Friend : I think he is better off than most men—he has got a couple of wives I believe ?

Witness : Yes, his first ran away with a soldier. (Laughter.)

Mr. Friend : And that was the confusion you talked about ?

Witness : I suppose it was, sir. The neighbours said his complaint seemed to be exactly like witchcraft, and that is why I went to the defendant ; for I've been told she tells very true, and so she did. (Laughter.)

Mr. Friend : Did you tell her your son was very ill ?

Witness : Not at all. I never mentioned to her my son was very ill. (After a pause) Well, I can't say now that I didn't tell her my son was very ill. She said he had a very good heart, and a very good principle, and if she supplied him with her superior medicine she knew when he got well he would pay her. (Laughter.)

Mary Hertford, a washerwoman, said she went to the defendant five years ago when a friend took her there. Knowing her, therefore, she recommended the last witness to consult the defendant, and she accompanied her to the house, and asked the defendant to "cut the cards" for Mrs.

Heacock. The defendant said there was great confusion in the cards, and Mrs. Heacock then prayed her to tell her what she saw there, "whether bad or good." Defendant wanted to know who Mrs. Heacock wanted to find out about, but Mrs. Heacock would not tell until the defendant had thrice shuffled the cards, and the defendant was still unable to ascertain who the person was. At length Mrs. Heacock said the individual was her son, and the defendant then proceeded, that there were two women in the case, one a dark, and the other a light woman, and one of them was a very bad woman. A sixpence was paid to Mrs. Arthur, but she did not name any charge, the witness and Mrs. Heacock understanding that that was her usual fee for "a cut of the cards."

Detective Skinner apprehended the defendant at her house on a warrant. He asked her to produce her cards, and she took out 33 from a box, these being of three different sorts. She said, "I assure you, Mr. Skinner, that I have cured hundreds, and am very clever." She produced a bottle of stuff she said she had prepared for "him."

Mr. Friend at first contended that a technicality arising out of a difference in the date of the warrant would cause the charge to fall to the ground, but he was asked by the Bench to proceed on the merits. He maintained at length that there had been no false pretence, but said that the defendant was a herbalist, and they knew it was true that herbalists often performed cures where surgical arts failed. Everything the defendant said was true—that the disease was invariably fatal in its termination, and there was nothing extravagant in the defendant's assertion that the cure would be accompanied with much expense. Without the temptation and solicitation of Mrs. Heacock the offence would not have been committed, and the defendant was not to blame in having done as she had, after being sought out to have her devices put in motion.

The Bench, after considerable discussion, unanimously found the prisoner guilty, and sentenced her to two months' imprisonment, directing that the expenses of her maintenance should be defrayed from the £3 found on her at the time of her apprehension.

It is easy to see that when a white witch uses such commonplace ingredients as liquorice root and cod liver oil, that she must be an impostor; and consequently one is not surprised to find that there was "considerable confusion," and that the detective officer declined to accept the bottle of stuff which had been specially prepared for him, even though the

prisoner asserted that she had "cured hundreds, and was very clever."

The following case is taken from the columns of the *Torquay Directory* for February 2nd, 1875, and is a very capital specimen of what would have terminated at Exeter two hundred years ago:

WITCHCRAFT AT NEWTON.

A curious case was brought under the notice of the Newton Guardians at their weekly meeting on Wednesday. A man named Prowse, of Highweek, applied for relief, when the following colloquy took place:

The Chairman (the Rev. Preb. Wolfe): What is the matter with you?

Prowse: I am bewitched (laughter); and a man who lives near the station, and does a little in the watch-cleaning line, has offered to cure me for a sovereign, and I've already paid him a shilling.

The Chairman: Do you know who bewitched you?

Prowse: Yes.

The Chairman: Who was it?

Prowse: Some woman who lives near Blatchford Brook. I was going home one day after leaving work, when I found something strike out of my head like. It nearly knocked me down, and I haven't been able to work since.

The Chairman: Do you, as a Christian man, wish a number of Christian gentlemen to believe that you are bewitched?

Prowse: I know I be.

The Chairman: But there's no such thing as witchcraft.

Prowse: I'll bet you five shillings there is. (Laughter.)

The Chairman: I am astonished at your ignorance. Do you really believe that the man you speak of can cure you?

Prowse: Certainly he can.

The Chairman: Well, that will do.

Admiral Wise stated that he knew the man, who had worked for Mr. L. Bearne, near Blatchford Brook, at draining. About Christmas last he came to him and stated in substance what he had stated now, with the addition that he heard an old woman's daughter say, "He shan't work there again for the next twelve months." Upon that he considered he was bewitched. The fact was the man had doubtless had an attack of apoplexy, and for the present was unfit to work.

Relief was then granted; and in reference to the man who had imposed upon his credulity, the Chairman observed there

were such men going, and they ought to be exposed. He suggested that the clerk communicate the facts to the sergeant of police, and allow him to take what proceedings he thought best in the matter.

Here every particular requisite to convict a prisoner for witchcraft was present. A quarrel had evidently taken place, a curse had been pronounced, and a result had followed. Nothing could be more complete. In times gone by a "Christian man" would have found no difficulty in convincing a "number of Christian gentleman that he had been bewitched." The old woman would have been arrested and well bothered ; after which she would have managed to secure for herself a little company on her way to jail, by inculcating two or three other old ladies of her acquaintance, who in their turn would have confessed to anything and everything, thus securing an edifying and imposing spectacle for those of the inhabitants of the city of Exeter who felt inclined to take a morning's walk as far as the Livery Dole, on the Heavitree road, some day or two after the closure of the next assizes.

These four cases are, I feel sure, but samples of what is every day occurring, though others have not come to my notice. It is sufficient only to say that at present there appears to be no signs of a disappearance of the belief in witchcraft.

THE COMMON SEALS OF DEVON.

PART III.

BY E. N. WORTH, F.G.S.

(Read at Torrington, July, 1875.)

SINCE my last notes on the common seals of Devon, three hitherto undescribed seals have come under my notice, which are here dealt with.

PLYMOUTH.—I have found among the corporation muni-ments of Plymouth impressions of a small seal used by the mayors in the latter half of the 17th century. It bore the borough arms—a saltire and four castles—and the motto, "*Turris fortissima est nomen Jehova.*" This is the first instance of the use of the borough motto with which I am acquainted, and I am inclined to think it was adopted as a memorial of the Siege which the Plymouth Roundheads successfully endured between the autumn of 1642 and the spring of 1646.

SIDMOUTH.—Mr. P. O. Hutchinson has kindly favoured me with particulars respecting the seal of the Local Board of Sidmouth. When the Local Board was established there was no known seal belonging to the place, which never had either a mayor or a corporation. Before the Conquest, Mr. Hutchinson informs me, the manor belonged to Ghyda, the mother of Harold. William gave it to the abbot of St. Michael's Mount in Normandy. Henry V. handed it over to the Monastery of Sion in Middlesex. Henry VIII. seized the manor and left it to his successors. James I. sold it to a Mr. Mainwaring, and it has since continued in private hands, now resting in the Balfour family. Neither the St. Michael's Mount nor Sion seals could with propriety have been adopted by the Local Board; and Mr. Hutchinson suggested a fishing boat, rigged with two lug-sails, as most of the Sidmouth boats are. This device was adopted, and it is accordingly borne by the seal of the Board, with the words "Sidmouth Local Board."

STONEHOUSE.—The Stonehouse School Board have adopted for their seal the arms of the ancient family of Stonehouse—azure on a bend cotised argent, three martlets sable; surrounded by the words "Seal of the East Stonehouse School Board."

DEVONSHIRE FARM LADS.

BY REV. TREASURER HAWKER, M.A.

(Read at Torrington, July, 1875.)

"EDUCATION* is a staunch opponent to crime. With every good seed sown, an evil one dies to make room for it; and the sowing of that seed in the proper and most fitting manner is worth a little more consideration on the part of those who have the genius to suggest amendments, and the power to carry those amendments out."†

I quote these wise words from a record of criminal experience, not because I consider the class to whom I would now direct attention necessarily or very frequently a criminal class, but because from their educational deficiencies I consider them more than usually liable to fall into criminality. I do not wish to claim too much for education, even if they are now beyond that condition of which, some 350 years since, Sir Thomas More said bitterly yet pityingly, "A life so wretched that even a beast's life seems enviable." But ignorance is not only weakness, both physical and moral; it is a dangerous poison, which all men ought to shun. Where there is no cultivation, weeds are far more likely to grow up than fruit or flowers.

Certainly with those for whom I desire the sympathies of my hearers, in the interests of social science as well as for their own, the flowers at present are few, and the fruit in most cases sadly scanty. The Agricultural Children's Act of 1873 may, and I trust will ultimately, work some good for the objects of legislation by its application of indirect com-

* "Education is the best weapon of precaution, and the noblest form of provision."—*Dulce Domum*.

"Education brings with it refinement of manners. It has weaned the gentry from the gross and brutal pleasures of former generations; and it may in time do the same for the labourer. But it has not checked vice in the upper classes; nor will it prevent crime in the lower."

† *Female Life in Prison*, vol. ii. p. 80.

pulsion.* Up to this date it is, according to my experience, quite a dead letter. But even allowing that sooner or later, according to its provisions, agricultural children are all to have a modicum (I will not say a minimum) of education up to twelve, there is then a missing link, a terrible hiatus, a dreary wilderness of waste and barrenness, before they become men, and claim the privileges of manhood which they now possess, not to speak of those which they seem destined to receive for weal or woe.

Take the case of an ordinary Devonshire farm lad (*ex uno disce omnes*), the son of labouring parents, who has had the full benefits of regular schooling at a good elementary school until he goes out to work in the fields at twelve years of age—ten is the more likely age—you cannot call him a man until he is eighteen or twenty years old; and what is to become of his intellectual culture during those intervening six or eight years?

How are the rudiments of learning, which we will suppose he has gained—I fear that very often he has not gained even so much—to be kept up or carried on to any completeness? How is there to be an earing from the seed, assuming that the seed has been diligently sown? You cannot bring any pressure to bear on such an age, certainly not directly; and the indirect compulsion of self-interest is not sufficiently strong, speaking generally, to make him exert himself.

For his eyes are necessarily blinded by his want of education. He does not feel his deficiencies, or if he does, it is after a dull, unintelligent fashion, without any perceptive faculty to discern the true remedy for his wants. The humanities of life are to him an unknown term. Nor, indeed, is it reasonable to expect that he will exert himself mentally. A long day's work out of doors in all weathers is sufficiently exhausting to an unknit frame to prevent any superabundance of energy at the close of it. Stephenseons and Brasseys, and self-made men of that sort, are not common.

Is it likely, to come down to sublunary points, that after the bodily appetite has been supplied with the evening meal, the fullest in the twenty-four hours, there will be much inclination, even if there is any opportunity, for reading, or writing, or ciphering? Some of us know what pressure has

* No child under eight can be employed except by his parent on his own land. No child above eight and under twelve can be employed on any kind of agricultural work, unless with a certificate of, under ten, 250 school attendances within the year, and 150 attendances if over ten. Certain exemptions are made, as for illness or a reasonable cause, or if the child has reached a certain standard of education.

to be put upon lads of the classes, whose education goes on at our public schools or elsewhere up to eighteen or nineteen, to turn them out fair scholars by that age. Their instructors can say, too, how athletics militate against the ordinary curriculum and the studious influences of Eton, Harrow, &c.

It is not likely then, I repeat, that these "unback'd colts" will ever, *proprio motu*, be incited "to quick motion" of the intellectual faculties. And where is the wand of Prospero? Where is the Prometheus to give the needful impulse? to light up the spark of intelligence? I am afraid Prosperos and Prometheuses are not common, and so these "young barbarians"—not all at play, for they lead a somewhat hard and dreary life—are let alone. They grow up in outward semblance dull, heavy, listless; they are frequently rude, finding their enjoyment on a rare holiday in gross, debasing pleasures; resenting after a stolid fashion the world's neglect, which passes them by with indifference, or, if jostled by them in the intercourse of life, gets out of their way angrily, and calls them clodpoles, chawbacons, and country bumpkins. They are, it cannot be denied, very much the opposite of Wordsworth's

"Lively Grecian, in his land of hills,
Rivers, and fertile plains, and sounding shores,—"

so far

"As nicest observation furnished hints
For studious fancy,"*

although this their native county need not fear comparison in its material features.

But be they what they may, this rough and summary way of dismissing them with contemptuousness, and ignoring what is disagreeable and unpleasant, at all times wrong and short-sighted, will by no means answer in the present day.

Naturam expellas furcâ. You may attempt to settle troublesome questions off hand by pooh-poohing them and shirking their serious and kindly consideration, but retribution is sure to follow. No link in the social chain can be neglected and allowed to rust without a certainty of a fracture, sooner or later, to the loss of all concerned. No higher philosophy can be uttered than that we are all members one of another. As the prescient writer, whom I have already quoted, Sir Thomas More, said, "If you allow your people to be badly taught, their morals to be corrupted from childhood, and then when they are men punish them for the very crimes to which they have been trained in childhood, what is this but first to make thieves and then to punish them?" And although a quickly-

* *Excursion*, book iv.

moving body may doubtless turn or be turned more easily in a wrong direction, yet an inert, sluggish mass is far more dangerous when once it is started into action, simply because its accumulated power cannot be arrested by ordinary means.

A purblind horse is a most difficult animal to control when once started; and we must remember that now, from the spread of education, there is even in very dark and remote corners a glimmering of light. We cannot, even if it were right or desirable, keep back the rising flood of intelligence. If a right direction is not given, there are those who will give a wrong one; if good seed is not sown, there will be bad, and an imperfectly educated man is apt, nay, almost sure, to stick to an opinion or an idea with provoking pertinacity and marvellous self-devotion to what all the rest of the world sees to be wrong. He is dangerously given, too, to set up a false idol from mistaken sympathy or enthusiasm for, as he supposes, the worthy champion of his class or cause, and then, after loss and disappointment from his generous sacrifices and partisanship, he has to say bitterly with Caliban in the *Tempest*—

“What a thrice double ass
Was I to take this drunkard for a god,
And worship this dull fool!”

The newspaper is fast becoming in England what it has long been in America; and whilst grateful, most grateful, to the press for the diffusion of knowledge and the increase of intelligence it promotes, it is not of course infallible. The press naturally writes and argues according to what is theoretically right, whereas practical persons have to deal with things as they are. And ignorant, uncultivated, uncared for labouring lads are not fitted, however loudly they may be told by certain organs of the press to the contrary, for the full possession of those rights of citizenship, which no one would or ought to grudge to them if they were fit. We are surely beginning at the wrong end when we press upon them privileges whose use they do not understand.

I come then to the important consideration for all of us; viz, what is to be done for those of whom I have been speaking? for those by whose “hard hands” we all, even to the king on his throne, live; with whom I myself have been mixed up for many years, and with whom some of my pleasantest recollections are connected? One word will answer this, as so many other questions—“Sympathy.”

“O I have suffered
With those that I saw suffer.”

is the pitiful cry of one of the most charming of Shakespere's creations, Miranda. (*Tempest*, act i. sc. 2.) To be regarded with affection or interest, we must show regard and interest. Go where we will, deal with whom we will, that is the golden key to unlock the recesses of men's hearts.

As Shakespere says again—

“One touch of Nature makes the whole world kin.”

And ages before Shakespere, Homer, in an equally pithy line, described a man who was loved by all, for he loved all—

“φίλος ἦν ἀνθρώποισι
πάντας γὰρ φιλέεσκεν.”*

The compassion expressed in such exquisite verses by the chorus in *Æschylus's Prometheus Vincit*, and even by the savage instruments of Jove's vengeance, arises from their knowing that Prometheus had tried to benefit his ignorant fellow-mortals. He himself puts it on this ground in glorious words, nobly translated.†

Now I do not suppose that any one will deny my general proposition; the difficulty of course will be in the particular application of this divine remedy—Sympathy. It is a difficulty, however, which I venture to think is more from viewing the matter at a distance than from any inherent difficulty in

* “Ἀξίλων δ' ἄρ' ἐπέφωε βοῇν ἀγαθὴν Διομήδης,
Τευθρανίδην, ὃς ἔταίην εὐκτιμένην ἐν Ἀρίσβῃ,
ἀφραιὸς βύβριον, φίλος δ' ἦν ἀνθρώποισι·
πάντας γὰρ φιλέεσκεν, ὃδ' ἔπι δαίκα ναιέων.—*Iliad*, ζ, 12.

“Next Teuthras' son distain'd the sands with blood,
Axylus, hospitable, rich, and good:
In fair Arisbe's walls (his native place)
He held his seat; a friend to human race.
Fast by the road, his ever-open door
Oblig'd the wealthy and relieved the poor.”

—POPE'S Translation.

† ὡς σφᾶς νηπίους ὄντας τὸ πρὶν
ἐννοῦς ἐθήκα καὶ φρενῶν ἐπηβόλους.
λέγω δὲ, μέμψην οὕτως ἀνθρώποις ἔχων,
ἀλλ' ὡς δίδωκ' ἔννοιαν ἐξηγοῦμενοι·
οἱ πρῶτα μὲν βλέποντες ἐβλεπον μάτηρ,
κλύοντες οὐκ ἤκουον, ἀλλ' ὁνειράτων
ἀλλυγκιοι μορφαῖσι τὸν μακρὸν χρόνον
ἐφύρουν ἐκτὴ πάντα.—433. κ. τ. λ.

“List ye to these. Now them, before as babes,
I roused to reason, gave them power to think;
And this I say, not finding fault with men,
But showing my goodwill in all I gave.
But first, though seeing, they did not perceive;
And hearing, heard not rightly; but, like forms
Of phantom-dreams, throughout their life's whole length
They muddled all at random.”

the matter itself. *Solvitur ambulando*. What is to hinder any educated person who desires to benefit his fellow-creatures from getting round him (I am speaking of those who live in the country) a class of farm lads once or twice a week, if not more? To the busiest there is leisure on the Sunday; and that is the obvious day for finding such lads at liberty. They will require a good deal of tact and management at first. Any attempt at coercion or scholastic discipline will almost certainly frighten them away; and it will frustrate the whole undertaking if they are to assemble in a schoolroom or put into classes, or, in short, made in any way to feel that they are being treated like school children. One's own house is the best place to have them. There is a potent spell thrown over "rude despisers of good manners" by the aspect and surroundings of refinement, the walls covered with prints or pictures, the books and ornaments, the carpeted floor. Their unrestrained admittance, too, into one's garden or grounds before they are all assembled, is a tacit appeal to their honour, which will rarely be abused. In short, the more they are treated as gentlemen, the more they will behave as gentlemen; so that the time and trouble bestowed on their culture will become a downright pleasure and enjoyment.

A little tact and temper will be needed to get them into hand; but once gain their confidence, and they will let you say anything to them, and it will not be difficult

"By slow prudence to make mild
A rugged people, and thro' soft degrees
Subdue them to the useful and the good."

—FENNYTON'S *Ulysses*.

Too much must not be expected of them when out of sight or behind one's back; it would be unreasonable to do so. Rome was not built in a day; yet it is a great and abiding vantage-ground to get 20 or 30 young men and lads of their order together, who will listen attentively and respectfully at any rate to what a clergyman or influential layman will tell them. Care must be taken not to cram them with what, I do not say it irreverently, children call "goody talk." To do so unduly is to take an unfair advantage of them, which they will secretly resent. I am not saying that it will not be well to make the staple of one's teaching the reading of the Bible, with a few simple explanations of difficult phrases and passages, with practical applications, also put easily and lightly, illustrating the events reported by good Scripture prints from the Society for Promoting Christian Knowledge and Religious Tract Society, or from

the admirable ones of Schnorr, and the like. Even well-educated people are far less acquainted with the Book of Books than might be supposed, and therefore it is well to seize every opportunity of increasing its knowledge. But I would also give such lads some information about sanitary matters and hygienic laws, employing for the purpose the admirable little books published now at a cheap cost, *e.g.*, *Lessons on Health*, by Miss Berners; nor would I altogether abstain from agricultural subjects, or even political economy.* They will drink in with eagerness—*me teste*—instruction on the laws of health, ventilation, cleanliness, good cookery, drains, choice of dwellings, recreation; and supposing, as is most probable, that they will not at once carry into practice what they hear, there will be fruit by-and-by in a greater intelligence, and a readier acceptance of these important points. Then, too, they can be told of the best means of providing for sickness or old age. Safe clubs and investments can be brought to their notice; or, at any rate, it can be pointed out to them in what direction they should look for trustworthy returns. The sure and simple security of the Post Office Savings Bank can be explained to them. Some general lessons of geography can be given, so that in case they wish to emigrate they may have some idea of the quarter of the world they are going to, if not the particular locality. And music may be called in to aid the humanizing process. They will take unwearying delight in singing two or three hymns at the close of their time of instruction. In short, when once attendance and confidence are gained, an earnest teacher will find manifold channels for imparting useful knowledge. All knowledge has, of course, its direct gain, but is really as nothing in comparison with the indirect gain of getting into contact with the lads and breaking through the icy barriers, as we hope the Arctic expedition will, into the warmth and life beyond. No one, who has not had the experience, can tell the change that comes over them after a few months of these quiet, friendly gatherings, whether on the Sundays only or on some of the week-days, also during the winter. In the first place, hours are filled up which other-

* "The work of the Friars, A.D. 1221-1226, was physical as well as moral. The rapid progress of population within the boroughs had outstripped the sanitary regulations of the middle ages, and fever or plague, or the more terrible scourge of leprosy, festered in the wretched hovels of the suburbs. It was to haunts such as these that Francis had pointed his disciples; and the Grey brethren at once fixed themselves in the meanest and poorest quarters of each town. Their first work lay in the noisome lazar-houses; it was amongst the lepers that they commonly chose the site of their houses." —GREEN'S *History of the English People*.

wise would be spent in idly lounging about the village, which leads to their encouraging one another in mischief and annoying, out of high spirits and sheer wantonness, the old and helpless. But there is much more than this. They feel, and it is what we all, consciously or unconsciously, yearn for, that there is some one caring for them; that they are not shunned or left to drift about at their own wills. I fear I cannot use Wordsworth's lines on the Thames from Westminster Bridge in the early morning, and say, "Their own sweet wills," like waifs and strays on the tide of life. By mixing on such terms with their superiors in worldly position they lose gradually that sullen, awkward shyness which belongs to homekeeping youths, and learn to use their tongues after the fashion of civilized, cultivated beings. Shelley makes one of his characters say, in *Prometheus Unbound*—

"He gave man speech, and speech created thought,
Which is the measure of the universe."

It is time that I draw to a close these slight suggestions. The importance of the subject has struck me, as a country clergyman, for many years. There was never a time when its consideration was more important than now; for undoubtedly we are in a transition state. The old order of things is passing away; whether for good or ill we need not discuss, the fact remains that agricultural labour, like other labour, is becoming a question of supply and demand. The paternal reign, which did not give much money, but gave a great deal of kindly care to the labourer, who had worked upon the same farm from boyhood to the grave's brink, is perforce well-nigh over. The facilities of locomotion, with the relaxation of the law of settlement, the widely diffused channels of information relating to work and wages in other localities than their own, the restlessness of youth, all combine to make labourers independent of any particular master or spot. He goes and will go to the best market. Who is to blame him for doing so? I certainly should not. But then he must be taught gently, yet decidedly, that he cannot, to use a homely proverb, eat his cake and have it too. He cannot leave his employer without scruple, no matter how pressing the work may be, and then expect to be kept on, as of yore, when the days are short or work is slack and hands are over plentiful. He cannot ignore all the ties of his birthplace at pleasure, and then come back to it when in distress or sickness, and expect that all the expenses of hospitals and infirmaries are to be sustained for his benefit by others without his contributing a

farthing. He must, sooner or later, face the fact that he has no right to marry before almost he has ceased to be a boy, and before his wife has either the strength or the skill of a woman, any more than soldiers, or sailors, or professional men. Nor is it possible, without hurt and misery to those who depend upon him, that he can go on spending upon his drink and tobacco sums out of all proportion to his income.

We are, even the best instructed among us, all too apt to forget that there are two blades to a pair of scissors.

All this that I have said he must learn, and it will be our wisdom, as it will be our charity, to teach him the lesson betimes, so that he may receive the teaching in a right and understanding spirit. We can do it if we please; we can help on the movement that has begun; we can, and that without more sacrifice of ourselves than we are bound to offer, by a little of such care and sympathy as I have pointed out, work equal wonders with Prospero in the *Tempest*, when he says—

“The charm dissolves apace;
And as the morning steals upon the night,
Melting the darkness, so their rising senses
Begin to chase the ignorant fumes that mantle
Their clearer reason.

Their understanding
Begins to swell; and the approaching tide
Will shortly fill the reasonable shores,
That now lies foul and muddy.”

Let me, then, say to any one who has been moved by my appeal, in the words of Longfellow—

“Still let it ever be thy pride
To linger by the labourer's side,
With words of sympathy or song,
To cheer the dreary march along
Of the great army of the poor.”

NOTES ON RECENT NOTICES OF THE GEOLOGY AND PALÆONTOLOGY OF DEVONSHIRE.

PART II.

BY W. PENGELLY, F.R.S., F.G.S.

(Read at Torrington, July, 1875.)

THE only noteworthy *Notices* of Devonshire Geology, &c., which I have met with during the last twelve months, have reference to the two most celebrated of our Caverns—Brixham (Windmill Hill) Cavern and Kent's Cavern.

I. MR. CLODD ON BRIXHAM CAVERN.

Mr. Clodd gives the following account, in his "Childhood of the World,"* of Brixham Cavern:—

"There is a large cavern at Brixham, on the south coast of Devonshire, which was discovered fourteen years ago through the falling in of a part of the roof. The floor is of stalagmite or particles of lime, which have been brought down from the roof by the dropping of water, and become hardened into stone again. In this floor, which is about one foot in thickness, were found bones of the reindeer and cave-bear, while below it was a red loamy mass, fifteen feet thick in some parts, in which were buried flint flakes, or knives, and bones of the mammoth. Beneath this was a bed of gravel, more than twenty feet thick, in which flint flakes and some small bones were found."†

The points in the foregoing passage requiring to be noted, are:—

- 1st. The date of the discovery of the Cavern.
- 2nd. The manner in which the discovery was made.
- 3rd. The remains found in the Stalagmitic Floor.

* "The Childhood of the World." By Edward Clodd, F.R.S. Second Edition. 1874. *Special Edition for Schools.* † Ibid, p. 29.

4th. The thickness of the "red loamy mass"—the deposit usually next below the Stalagmite.

5th. The remains found in the "red loamy mass."

6th. The thickness of the "gravel"—or the deposit next below the "red loamy mass."

7th. the remains found in the "gravel."

1st. *The date of the discovery of the Cavern*:—The Cavern was discovered very early in 1858, that is, *sixteen* years before the date of the author's work from which the passage was taken, and not, as he says, "fourteen years ago." It is probable that the statement was quite correct when the book was written, that is when the first edition was published; and it would not have been worth stopping to call attention to so unimportant an error, had it not seemed desirable to remark that it is quite as easy—whilst it is entirely free from ambiguity or error—to state in what year a given event occurred, as it is to say how long ago it was.

2nd. *The manner in which the Cavern was discovered*:—Early in January 1858, the removal of a mass of limestone, in the ordinary course of work, in Mr. Philp's quarry on Windmill Hill, Brixham, disclosed, in the line of a close north-and-south joint, a hole just large enough to admit a man's fist. A few days afterwards, the workmen on returning from their dinner, missed one of their iron boring tools or "jumpers," and supposed it had been stolen. Some days later still, when other layers of limestone had been removed from the same spot, it was found that the hole was not only continued, but was so much larger as to allow the descent of a small man through it. Drawn by curiosity to the spot, Mr. Philp found that it opened into a cavity of no great depth, in which lay the missing jumper, which had probably been thrust down by some one fond of a practical joke. He at once descended to recover the tool, and found himself near one end of a tunnel or gallery, about five feet wide, three or four feet high, and upwards of fifty feet long. In short, he at once recovered his jumper, and discovered the Cavern which has since become so famous, and has contributed so very largely to the change of opinion respecting the antiquity of man.

I have seen it asserted elsewhere that the Cavern was discovered, as Mr. Clodd states, "through the falling in of a part of the roof;" but it was really discovered in the manner just described.

3rd. *The remains found in the Stalagmitic Floor*.—Ten “finds,” including thirteen specimens, of remains of mammals were met with in, or attached to, the Stalagmite. Four of them belonged to Bear, three to Reindeer, three to the tichorhine Rhinoceros, two to Mammoth, and one to Lion. All the Ursine relics have been identified by Mr. G. Busk as belonging to the Brown Bear, with the exception of one specimen (No. 80) described as a “large portion of the left ulna, of small size Ursus,” and therefore probably belonging also to the Brown Bear. Remains of the comparatively gigantic Cave Bear, though met with in the Cavern, were very rare, and none of them in, or connected with, the Stalagmite.

4th. *The thickness of the “red loamy mass”*.—The ordinary thickness of the red loamy mass, usually called the “Third Bed,” was from two to four feet, but in one part of the Cavern, where the conditions were exceptional, it measured as much as thirteen feet; even there, however, it never reached the fifteen feet mentioned by the author.

5th. *The remains found in the “red loamy bed”*.—Mr. Clodd states correctly that in the red loamy bed “were buried flint flakes, or knives, and bones of the mammoth.” It must not be supposed, however, that the Mammoth was the only, or even the most prevalent, form, or that its presence has a chronological value beyond that attaching to several other of the Cavern species. The mammals actually identified were, Bear (three species—Cave, Grizzly, and Brown), Reindeer, tichorhine Rhinoceros, Hyæna, Horse, Ox (two species), Mammoth, Roebuck, Red-deer, Lion, Fox, Pole-cat, and Cave-Pika. The names are given in the order of the prevalence of their identifiable remains, commencing with the most prevalent and closing with the least.

6th. *The thickness of the “Gravel”*.—It is impossible to say what was the actual thickness of the Gravel, or “Fourth Bed,” as its bottom was nowhere reached, except in one of the galleries for a length of about fourteen feet, where it rested on the continuous limestone floor of the Cavern, and had a thickness nowhere exceeding six feet. The greatest depth to which it was excavated did not exceed seven feet below the base of the “red loamy mass;” for, on account of the near approach of the walls of the Cavern to one another as the excavation extended downwards, it was impossible for the workmen to follow it further. Whether the Gravel

was, as the author states, actually "more than twenty feet thick" it is impossible for any one either to affirm or to deny; but practically, and so far as is known, it did not extend beyond one-third of that thickness.

7th. *The remains found in the Gravel*:—Though the author is correct in stating that "flint flakes and some bones were found" in the Gravel, his statement that the bones were "small" is not unlikely to produce an incorrect idea. In fact, no more than seven bones were met with in this lowest deposit, and of these five only were identifiable—two of Bear, one of Horse, one of Ox, and one of Mammoth. It will be seen therefore that the animals represented were all of them species of great size; and though the bones were usually amongst the smaller members of the skeleton, such as teeth and bones of the feet, one of them was a portion of the shaft of the thigh bone of a Mammoth and about six inches long; in fact, the largest volume of bone met with in the Cavern.

II. "THE POPULAR SCIENCE REVIEW" ON KENT'S CAVERN.

The "Scientific Summary" in "The Popular Science Review," for October, 1874, contains the following paragraph, under the heading of "Geology and Palæontology":—"The *Tenth Report on Kent's Cavern* was read by Mr. Pengelly, F.R.S., at the meeting of the British Association at Belfast. This cave contains four layers in ascending order—breccia, crystalline stalagmite, cave earth, and granular stalagmite. The work of exploration is still going on in the Cave of Inscriptions and Clinnick's Gallery. The breccia has yielded a great number of implements, and bones in abundance have been found. One very fine implement was found near to the great boss of stalagmite, from which an inscription on its surface shows that the stalagmite has undergone no change during the last two-and-a-half centuries. Mr. Pengelly differs from Sir C. Lyell, inasmuch as the author holds the opinion that man came to England, not only when it was a part of the continent, but man must have been in Devon at a much earlier period, when England was separated from the continent of Europe. In the discussion which ensued, Professor Geikie, of Edinburgh, doubted the conclusion that the author had arrived at—viz. that the men of Devon had looked upon the glaciers of the glacial period. Mr. Pengelly, in reply, said he based his opinion regarding

the early appearance of man on the remarkable absence of the hyæna, which is so abundant in the cave earth."*

There can be no doubt that ordinary readers would draw the following inferences from the passage just quoted :—

1. That the Cavern evidence had led me to the conclusion that men had occupied Devonshire prior to the last continental period of Britain.

2. That the Cavern evidence had failed to convince Sir C. Lyell of the soundness of this conclusion.

3. That I had arrived at the conclusion that the Cave men of Devon had looked upon the glaciers of the Glacial period.

4. That Professor Geikie of Edinburgh doubted the soundness of this conclusion.

I purpose making a few remarks on each of these points, in the order in which they stand.

1. It is quite true that the Cavern evidence has led me to the conclusion that men had occupied Devonshire prior to the last continental period of Britain; and I will now endeavour to show by what steps I have been taken. In order to this it may be well to state (A) what is meant by the *last Continental period of Britain*, and (B) what is the *Cavern evidence* spoken of.

A. The scheme of geological chronology employed by Sir C. Lyell, is based on Palæontology. All deposits in which the fossil remains of *Mammals*, as well as of *Mollusks*, are those of species identical with such species as now live, are termed "Recent." Those next below, and therefore older, in which the *shells* are *all* of living forms, whilst the *Mammalia*, in part, and often a considerable part, belong to extinct species, such as the Mammoth and his contemporaries, are called "Pleistocene." The Recent and Pleistocene together, make up the "Post-Tertiary," or, as some term them, the "Quaternary," deposits.

The distinguished author just mentioned recognizes two distinct periods during the Pleistocene era when, at least, Western Europe stood at a level so much higher than at present that Britain formed a continuous portion of the continent. "In order," he says, "to form a connected view of the most simple series of changes in physical geography which can possibly account for the phenomena of the glacial period, and the period of the establishment of the present

* "Pop. Sci. Rev.," vol. xiii. p. 436.

provinces of animals and plants, the following geographical states of the British and adjoining areas may be enumerated.

"First, a continental period, towards the close of which the forest of Cromer flourished: when the land was at least 500 feet above its present level, perhaps much higher. . . . The remains of *Hippopotamus major*, and *Rhinoceros etruscus*, found in beds of this period, seem to indicate a climate somewhat milder than that now prevailing in Great Britain. [This was a *Pre-glacial* era.]

"Secondly, a period of submergence, by which the land north of the Thames and Bristol Channel, and that of Ireland, was generally reduced to . . . an archipelago. . . . This was the period of great submergence and of floating ice [in British waters], when the Scandinavian flora, which occupied the lower grounds during the first continental period, may have obtained exclusive possession of the only lands not covered with perpetual snow. [This was a portion of the *Glacial* period, or perhaps, more correctly, it was one of the *Glacial* periods.]

"Thirdly, a second continental period, when the bed of the glacial sea [just described], with its marine shells and erratic blocks, was laid dry, and when the quantity of land equalled that of the first period. . . . During this period there were glaciers in the higher mountains of Scotland and Wales, and the Welsh glaciers . . . pushed before them and cleared out the marine drift with which some valleys had been filled during the period of submergence. . . . During this last period the passage of the Germanic flora into the British area took place, and the Scandinavian plants, together with northern insects, birds, and quadrupeds, retreated into the higher grounds. . . .

"Fourthly, the next and last change comprised the breaking up of the land of the British area once more into numerous islands, ending in the present geographical condition of things. There were probably many oscillations of level during this last conversion of continuous land into islands, and such movements in opposite directions would account for the occurrence of marine shells at moderate heights above the level of the sea, notwithstanding a general lowering of the land. . . . During this period a gradual amelioration of temperature took place, from the cold of the glacial period [just described] to the climate of historical times." *

The "Forest of Cromer," referred to above, is now repre-

* "The Geological Evidences of the Antiquity of Man." By Sir Charles Lyell, Bart., M.A., F.R.S. Fourth Edition. 1873. pp. 331-2.

sented by a bed at the base of the sea cliffs near Cromer in Norfolk. It consists of clay enclosing stumps of trees, chiefly pine, with the roots outspread. Amongst the plant remains, Professor Heer has identified those of the Scotch and Spruce firs, Yew, Yellow water-lily, Hornwort, Pondweed, Common sloe, Buckbean, White water-lily, Alder, Oak, and Birch. The insects, so far as they are known, including several species of *Donacia*, and also the freshwater shells, are, like the plants, of living species. Mr. Boyd Dawkins has identified in the Mammalian collections from the bed, a total of 26 species, of which 16 are extinct and 10 living. On the authority of Professor Owen, 4 other species, all of existing forms, may be added to the list.

The Forest Bed is overlain by the following deposits in ascending order :—

- (a.) Weybourne Sands.
- (b.) Fluvio-marine pebbly sands and clays with abundant lignite beds, and mammalian remains, cones of Scotch and Spruce firs and other wood. At the top of these beds, in the lignite layers, arctic plants have been found.
- (c.) *Till* of the Norfolk coast boulder-clay of glacial period, with far transported erratics, some of them polished and scratched, 20 to 80 feet in thickness.
- (d.) Contorted Drift.
- (e.) Superficial gravel and sand of undetermined age.*

B. In proceeding to state the Kent's Cavern evidence which has led me to the conclusion that man occupied Devonshire prior to the second, *i.e.* the last, continental period, it ought at once to be acknowledged that it is purely negative in its character; nevertheless it seems much too strong to be set aside. The facts are as follow: The successive deposits met with in the Cavern, during the exploration which was commenced early in 1865 and is still in progress, are as given below, in descending order :—

- (a.) Blocks of limestone from a few pounds to upwards of one hundred tons in weight each, which had fallen from the roof from time to time.
- (b.) Beneath and between the blocks lay a dark-coloured mud, composed largely of decomposed vegetable matter, varying from three to twelve inches in thickness, and known as the "Black Mould."
- (c.) Under this was a stalagmitic floor, commonly of granular texture, measuring from an inch or even less to upwards of five

* See "Antiquity of Man," pp. 255-7.

feet in thickness, frequently containing large blocks of limestone, and termed the "Granular Stalagmite."

(d.) An almost black layer, about four inches thick, composed mainly of small fragments of charred wood, and distinguished as the "Black Band," occupied an area of about one hundred square feet, immediately under the Granular Stalagmite, and thirty-two feet from one of the external entrances to the Cavern at its nearest approach to it. Nothing of the kind has been found elsewhere during the present investigation.

(e.) Immediately under the Granular Stalagmite and the Black Band, lay an accumulation of light red clay, containing on the average about 50 per cent. of small angular fragments of limestone. In addition to these, blocks of the same material, as large as those already mentioned as lying on the Black Mould, were somewhat numerous. In this deposit, known as the "Cave-Earth," many of the stones and animal remains were, at all levels, invested with thin films of stalagmite. It was usually of unknown depth, but in most cases certainly exceeded four feet, though it was occasionally less, and in some instances there was none.

(f.) Wherever the bottom of the "Cave-Earth" was reached, there was usually found beneath it a floor of stalagmite having a crystalline structure. This, designated the "Crystalline Stalagmite," was commonly of greater thickness than the upper or Granular floor in the same branches of the Cavern, and measured in some instances little short of twelve feet.

(g.) Below the whole occurred, so far as is at present known, the lowest and oldest deposit which the Cavern contained, composed of sub-angular and rounded pieces of dark red grit, with an occasional fragment of quartz, embedded in a sandy paste of the same colour. Small angular pieces of limestone, and thin investing films, both prevalent in the Cave-Earth as already stated, were extremely rare, and the deposit, to which the name of "Breccia" has been given, was of a depth exceeding that to which the exploration has yet been carried.

Excepting the overlying blocks of limestone, of course, all the deposits contained remains of animals. In the Black Mould, the most modern of them, they were those of species still existing and almost all of them now occupying the district, and included Man, Dog, Fox, Badger, Brown Bear, Long-fronted Ox, Roe-Deer, Sheep, Goat, Pig, Hare, Rabbit, Water-Rat, and Seal.

In the Granular Stalagmite, Black Band, and Cave-Earth, extinct as well as recent species presented themselves. The Cave Hyæna was the most prevalent; the Horse and Tichorhine Rhinoceros came next in order; the Gigantic Irish Deer, Wild-Bull, Bison, Red-Deer, Mammoth, Badger, and the Cave, Grizzly, and Brown Bears were by no means rare; whilst remains of Beaver, Glutton, and *Machairodus latidens* were very scarce. The presence of the Cave Hyæna was announced, not only by his bones and teeth, but also by his coprolites, by bones broken after a manner still followed by existing members of the same genus, and by the marks of his teeth found on a very large proportion of the osseous remains.

In the two lowest deposits—the Crystalline Stalagmite and the Breccia—remains of mammalia were less uniformly distributed. In some cases there were none throughout considerable volumes of the deposits, whilst in others they formed one half of the entire mass of material. So far as is at present known, they were almost exclusively the remains of bears, the only known exceptions being a few teeth of some large species of *Felis*, probably *F. spelæa*, and of the common Fox, very recently found. Not only were there neither bones nor teeth of the Hyæna, there were none of his fæces, none of his teeth-marks, no bones fractured according to his well-known pattern, in short, nothing whatever to indicate his existence.

The bones found in the different deposits possessed well-marked and characteristic differences. Those of the Black Mould, or most modern accumulation, were of much less specific gravity than those in any of the beds below it, and were generally so light as to float in water. The specimens in the Granular Stalagmite and in all the deposits below it, had lost their animal matter, and adhered to the tongue when applied to it so as frequently to support their own weight; but those from the Crystalline Stalagmite and the Breccia, the two lowest deposits, were so highly mineralized, so very brittle, and emitted such a metallic sound when struck, as to distinguish them from all the other Cavern specimens. Most of these oldest specimens were of a dark colour, but occasionally teeth and bones presented themselves remarkable for their beautiful whiteness.

The following general statements may be of service, by way of recapitulation, before proceeding further:—

(a.) The Cavern contained three distinct mechanical deposits—the Black Mould, or uppermost, or most modern; the

Cave-Earth, including the local Black Band; and the Breccia, or lowermost, or most ancient at present found. Their mode of succession was never transgressed, and the materials of which they consisted were so very dissimilar as to characterise them with great distinctness.

(b.) These three accumulations were separated by two distinct floors of Stalagmite having strongly contrasted characters. That dividing the Black Mould, or uppermost deposit, from the Cave-Earth, was granular; whilst that lying between the Cave-Earth and Breccia, or lowermost deposit, was eminently crystalline.

(c.) Animal remains occurred everywhere, but were much more abundant in the mechanically-formed deposits than in the Stalagmites.

(d.) The period represented by the Black Mould—the most modern period—may, as a matter of convenience, and so far as Kent's Cavern is concerned, be termed the "Ovine period;" remains of sheep being restricted to this accumulation.

(e.) The period represented jointly by the Granular Stalagmite, the Black Band, and the Cave-Earth, may be denominated the "Hyænine period," the remains of the Cave-Hyæna being far more prevalent there than those of any other species, and, so far as is known, not found above or below these deposits.

(f.) The period of the Crystalline Stalagmite and the Breccia—the most ancient period represented by the Cavern deposits, so far as they are at present known—may be called the "Ursine period," not because the more recent deposits did not contain remains of Bear, but because the beds under notice contained, so far as is known, relics of no other genus, except a few feline and vulpine teeth.

(g.) The bones of each period were distinguishable by their condition; those from the Black Mould being lighter, and those from the Breccia more mineralized, than the products of the Cave-Earth.

Flint and chert implements presented themselves in each of the three mechanically-formed deposits, and, as in the case of the bones, as well as in that of the materials composing the deposits themselves, those belonging to any one of them were easily distinguishable from those of the other two.

The implements of the Black Mould—the Ovine or most modern period—were of the ordinary colour of common flints, and were mere flakes and "strike-lights," the latter having been probably used and cast aside or lost by those who during a long period, and before the invention of lucifer-

matches, acted as guides to the Cavern. In the same deposit were found many other human industrial remains, amongst which were spindle-whorls made of different kinds of stone, some ornamented and others not; fragments of curvilinear plates of slate—perhaps covers of earthenware vessels; amber beads; bone tools, including awls, chisels, and combs, the latter being of the form and size of ordinary shoe-horns and having the teeth at the broad end; bronze articles, including rings, a fibula, a spoon, a spear-head, a socketed celt, and a pin; portions of cakes of smelted copper; and a great number and variety of potsherds, including fragments of Samian ware.

Omitting mere chips and flakes, of which there were great numbers, the principal flint and chert implements found in the Cave-Earth, or Hyænine deposit, were *ovoid*, *lanceolate*, and *tongue-shaped*; produced by fashioning, not flint or chert nodules, but flakes struck off them for the purpose. They were of comparatively delicate proportions, and usually characterized by bilateral symmetry. Those of flint were commonly of a white colour and porcellanous aspect; and, through metamorphosis, capable of being scratched with a knife, and having a granular chalk-like texture. In the same deposit, there were also found a bone needle or bodkin, having a well-formed eye; three bone “harpoons” or fish-spears, one of them barbed on both sides and the others on one only; a bone pin; a bone awl; a hammer stone; “whet-stones;” charred bones and wood; and a badger’s canine tooth having the fang artificially perforated, apparently for the purpose of being strung with others to form a necklace or bracelet—an indication that the Cave-men of the Hyænine period occupied themselves in making ornaments as well as objects of mere utility. Some of the bone implements were found at the greatest depth to which the excavation has been carried in the Cave-Earth.

The implements found in the Breccia, and belonging therefore to the Ursine or most ancient period, were exclusively of flint and chert. They were much more rudely formed, more massive, less symmetrical in outline, and made by operating, not on flakes, but directly on nodules, which appear to have been derived from supra-cretaceous gravels between Torquay and Newton Abbot, about four miles from the Cavern, and they generally retained portions of the original surface. It is obvious, however, that even such tools could not be made without the dislodgment of flakes and chips, some of which would be capable of being utilized, and accordingly a few

remnants of this kind have been met with in the Breccia, but they are all of a very rude and simple character. The implements are by no means so abundant as those in the Cave-Earth; that is to say, a given volume of Breccia has not yielded so many implements as would on the average occur in an equal volume of the less ancient accumulation. Whether equal periods of time are represented by equal volumes of deposit in the two cases, or whether equal periods of time represent equal numbers of cave-dwellers, or tool-makers, or flint tools, are questions into which it is not here proposed to enter.

In proceeding to the chronology of the Cavern, it cannot be doubted that the implements of the Breccia belonged to an earlier period than those of the Cave-Earth, for

(a.) When the two deposits occurred in the same vertical section, which was almost invariably the case, the Breccia underlay the Cave-Earth in every instance.

(b.) Though lodged on the same area, the two deposits were very dissimilar, as has been already stated; the Breccia consisting of a dark-red sandy paste containing a very large number of sub-angular and rounded fragments of grit of the same colour, which, though derivable from adjacent and loftier eminences, the Cavern hill could not supply; whilst the Cave-Earth was made up of a light-red clay with small angular fragments of limestone.

(b.) These two deposits were separated by a sheet of Crystalline Stalagmite, in some places almost twelve feet thick, formed after the materials of the Breccia had all been introduced, but before the introduction of the Cave-Earth commenced.

(c.) After the Stalagmite just mentioned had sealed up the Breccia, it was, in extensive parts of the Cavern, broken up by some natural agency; and much of the underlying Breccia was dislodged and carried out of the Cavern before the first instalment of Cave-earth was deposited.

(d.) The Cavern faunæ during the two periods represented by the Breccia and the Cave-earth, were very dissimilar. That of the older era did not include the Hyæna, which played so conspicuous a part in the Cavern history during the Cave-Earth era, and whose agency, next to that of man, made cavern-searching an important branch of science.

The deposits and changes just described were obviously not only distinct and successive, but also very protracted terms in the Cavern chronology, as is strikingly seen in considering

the local and general geographical changes which they indicate.

(a.) During the period of the Breccia, there was a machinery capable of transporting from Lincombe or Warberry-hill, or both, or from some greater distance, fragments of dark red grit, varying in size from pieces four inches in mean diameter to mere sand, and lodging them in the Cavern. This so completely passed away that nothing whatever was carried in, but the deposit already there was covered with a thick sheet of Crystalline Stalagmite, obtained through the solution of portions of the limestone in the heart of which the Cavern lay. This stage having also ended, the stalagmite was broken up by some natural agency, apparently not by one effort, but by many in succession, and much of the Breccia it covered was dislodged and carried out of the Cavern. This re-excavating process having in like manner come to a close, again a deposit was introduced; but, instead of consisting of dark-red stones and sand, as in the former instance, it was made up of a light-red clay; and in it were embedded small fragments of limestone, which, from their angularity, could not have been rolled, but were in all probability supplied by the waste of the walls and roof of the cavern itself.

(b.) The palæontology of the two deposits is perhaps even more significant of physical changes. When the cavern-haunting habits of the Hyæna are remembered, it will be seen that his entire absence from the fauna of the Breccia, and his remarkable preponderance in that of the Cave Earth, render it eminently probable that he was not an occupant of Britain during the earlier period. To accept this however—and there seems to be no means of escaping it—is to accept the opinion that between the eras of the Breccia and of the Cave Earth it had become possible for the Hyæna to reach this country; in other words, that the second, or last, continental condition of Britain was subsequent to the era of the Breccia, an era during which, as has been already shown, man occupied Devonshire.

These, then, are the facts which appear to me to point unmistakably to the conclusion that the earliest men of Devonshire which research has at present disclosed to us—the men of the Breccia, the Ursine period—saw this country an island as we see it, and that in the time of their descendants, or their successors, prior to the commencement of the Cave-Earth or Hyænine period, it had reached a continental condition. This latter condition has so long ceased that the

earliest traditions respecting our country recognize it as an island, even though they profess to go back to a time when the Orkneys formed but one island and Anglesea was not detached from Wales.* Indeed, unless we suppose him to have possessed the means of navigation, the advent of man in Britain must have been during the *first* continental period—that of the Forest of Cromer.

Before passing on to a consideration of the remaining three points, there are a few topics arising out of what has been already stated which appear to be noteworthy.

A. Though the absence of remains or indications of the *Hyæna* in the Breccia appears to admit of no other interpretation than that the genus had not then reached this country, the same inference cannot be drawn respecting the Horse, Ox, Deer, &c., whose remains are equally wanting in the same deposit; for it may be presumed that their bones occur in Caverns mainly because their dead bodies were dragged thither piecemeal by the *Hyæna*, and, excepting such bones as may have been washed in by continuous streams or occasional floods, this could not have occurred, even though they had crowded the country, before the arrival of the great bone-eating scavenger who made the Cavern his home. The remains of the Bear in the Breccia present no difficulty, for their introduction did not require the agency of the *Hyæna*, since the Bear is a cave-dweller.†

B. Assuming it to be true that the Cavern Breccia was deposited before the second, but not before the first, continental period of Britain, it becomes of importance to ascertain, if possible, what mammals occupied this country during the earlier of these two periods; for, since no species could have travelled hither in the intermediate period of great submergence, there should be nothing conflicting between the first continental fauna and that of the Breccia: Bears, for example, may reasonably be looked for in the former, since they occur in the Breccia; and it would certainly be remarkable to find the *Hyæna* in the "first continental" list of British Mammals, seeing that it forms no part of that of the oldest known deposit of Kent's Hole.

The most complete evidence respecting the mammals which occupied Britain during the first continental period is that

* See the 67th of the *Historical Triads of Britain*.

† See a letter to the author by Dr. Leith Adams, F.R.S., so well known as a naturalist and cavern explorer. *Report Brit. Assoc.*, 1873, p. 209. Note.

furnished by the Forest Bed of Cromer, in which the following species have been identified by Mr. Boyd Dawkins:—

1. <i>Sorex moschatus</i> , Linn.	Musk Rat.
2. <i>S. vulgaris</i> , Owen.	Common Shrew.
3. <i>Talpa europæa</i> , Schm.	Common Mole.
4. <i>Trogontherium Cuvieri</i> , Fisch.	
5. <i>Castor fiber</i> , Owen.	Beaver.
6. <i>Ursus spelæus</i> , Blum.	Cave Bear.
7. <i>U. arvernensis</i> .	
8. <i>Canis lupus</i> , Linn.	Wolf.
9. <i>C. vulpes</i> , Briss.	Fox.
10. <i>Machairodus</i> .	
11. <i>Cervus megaceros</i> , Owen.	Gigantic Irish Deer.
12. <i>C. capreolus</i> , Linn.	Roe Deer.
13. <i>C. elaphus</i> , Linn.	Red Deer.
14. <i>C. polignacus</i> , Falc.	
15. <i>C. carnutorum</i> , Dawk.	
16. <i>C. verticornis</i> , Dawk.	
17. <i>C. sedgwickii</i> , Gunn.	
18. <i>Bos primigenius</i> , Boj.	Wild Bull.
19. <i>Hippopotamus major</i> , Nesti.	Great Hippopotamus.
20. <i>Sus scrofa</i> , Linn.	Common Wild Pig.
21. <i>Equus caballus</i> , Linn.	Common Horse.
22. <i>Rhinoceros etruscus</i> , Falc.	
23. <i>R. megarhinus</i> , Christol.	
24. <i>Elephas meridionalis</i> , Nesti.	
25. <i>E. antiquus</i> , Falconer.	
26. <i>E. primigenius</i> , Blum.	Mammoth.

It is satisfactory to find from the foregoing list, that the Forest Bed, like the Kent's Hole Breccia, *does* contain remains of Bears, including *Ursus spelæus*, but *does not* contain relics of *Hyæna*. It must be unnecessary to remark that should further researches in the Cavern Breccia disclose traces of any other of the Cromer species, there will be nothing very surprising in the fact, as they may have been washed in with the fragments of grit. The only thing that can prejudicially affect the argument here employed, would be the discovery of indications of the *Hyæna* either at Cromer or in Kent's Hole.

2. As already stated, ordinary readers would in all probability infer from the passage in the "Popular Science Review," which has furnished the text for this Note, that the Cavern evidence had failed to convince Sir Charles Lyell of the soundness of the conclusion to which it had led me. The fact is, the Tenth Report on the Exploration of Kent's Hole, read at Belfast, contains a statement of the facts constituting the evidence; but the conclusion spoken of I laid

before the meeting orally and parenthetically whilst reading the Report, stating that the facts which had been described in the Report, led me to the belief that Man occupied Britain at a period earlier than that named by Sir Charles Lyell, who, in his "Antiquity of Man," supposed him to have been here during, but not before, the second continental period, whereas it appeared to me that he must have been here prior to that time; that, in fact, the earliest Devonshire men known to us were, at least, interglacial, perhaps pre-glacial. This, and this only, was the basis of the statement, in the "Review," that I differed from Sir Charles Lyell on the point.

In truth, when enunciating this opinion at Belfast, the following passage by Sir Charles was before my mind:—"Judging from the evidence at present before us, the first appearance of Man, when together with the Mammoth and woolly Rhinoceros, or with the *Elephas antiquus*, *Rhinoceros hemitæchus*, and *Hippopotamus major*, he ranged freely from all parts of the continent into the British area, took place during this second continental period."*

I am not aware that the distinguished author just quoted, now, alas! lost to us for ever, had been engaged on any work on Human Antiquity since the new evidence came to light, nor can I have any right to state whether it had occupied his attention, or whither it was likely to lead him; but we may be assured that the opinion respecting the earliest advent of man, in the passage quoted above, was merely that to which the facts then known had led him, and was by no means intended to be taken as a definitive disposal of the question. "For the present," he writes, "we must be content to wait and consider that we have made no investigations which entitle us to wonder that the bones or stone weapons of the era of *Elephas meridionalis* [of the first continental period] have failed to come to light. If any such lie hid in those strata, and should hereafter be revealed to us, they would carry back the antiquity of Man to a distance of time probably more than twice as great as that which separates our era from that of the most ancient tool-bearing gravels yet discovered in Picardy or elsewhere."†

Again, "I trust I have said enough to show that the monuments of the glacial period, when more thoroughly investigated, will do much towards expanding our views as to the antiquity of the fauna and flora now contemporary with Man, and will therefore enable us the better to determine the

* "The Geological Evidences of the Antiquity of Man." By Sir Charles Lyell, F.R.S. Third Edition. 1863. p. 283. † Ibid, Fourth Edition, p. 272.

time at which Man began to form part of the fauna of the northern hemisphere."*

3. With reference to the third point, *i.e.* that I had arrived at the conclusion that the Cave-men of Devon had looked upon the glaciers of the glacial period, it has already been stated that, at Belfast, I expressed the belief that the earliest Devonshire men known to us were at least interglacial; perhaps pre-glacial. It must be unnecessary to remark that the conclusion that man occupied Devonshire prior to the second continental period, for which in the present state of the evidence I contend, is but another way of saying that he arrived here during the period of great submergence, which, Sir Charles Lyell tells us, was the period of floating ice; or that his advent was in the still earlier first continental period, when the Forest of Cromer flourished, and the land was occupied by *Elephas meridionalis* and his contemporaries, and when, according to the same authority, the climate was probably somewhat milder than that now prevailing in Great Britain. In the former case he would have been interglacial—that is on the highly probable hypothesis of there having been more than one period of intense cold—and in the latter, pre-glacial; but whether, in either case, he looked upon glaciers, that is whether the heights of Devonshire, like the northern portions of our island, were occupied with glaciers is quite another question.

It is of the greatest interest to remark here that if the succession of deposits in the Victoria Cave, near Settle in Yorkshire, as described in the Report of the Committee for exploring that Cavern, has been clearly established—and this I have no reason to doubt,—a human bone has actually been found there in a pre-glacial bed.

4. Whether Professor Geikie did or did not doubt that the Men of Devon had looked upon the glaciers of the glacial period, there was nothing which transpired at Belfast to show. That which really did occur was simply this:—At the close of the Report on Kent's Cavern, the Professor, recalling my oral and parenthetical statement, to which reference has already been made, asked what were my reasons for believing that the Breccia men were interglacial or, perhaps, pre-glacial? What was the evidence that the men of Devon had ever looked on the glaciers of the glacial period? I understood his question to be put, not as an interrogative expression of

* "Antiquity of Man." Fourth Edition, p. 412.

scepticism, but for the purpose of eliciting information on two points:—A. What was the evidence of the interglacial, if not pre-glacial, age of the men? B. What was the evidence, if any, of the former existence of glaciers in Devonshire? and I shaped my reply in accordance with this two-fold idea of his question.

A. I recapitulated the facts already given, and pointed out that I relied solely on the well-known Cave-haunting habits of Hyænas; on their remarkable prevalence in the Cavern during the Cave-earth period; and on their total absence during that of the Breccia. B. Proceeding then to the second aspect of the question, I remarked that, so far as my own knowledge went, there were but two indications of glaciers in Devonshire; that the first was the famous granite boulder supporting the Raised Beach near Saunton Point on the northern shore of Barnstaple Bay, which, come whence it might, must have been ice-borne; and, secondly, that the "Head" of Clay and Boulders, covering unconformably the Miocene Lignites and Clays of Bovey Heathfield, in South Devon, owed its existence as a deposit to some agency not at present in operation in the district; that glacial action would readily and completely account for it; and that were a striated boulder found in it I should at once, and unhesitatingly, regard the accumulation as a glacial deposit, but I admitted that I had failed to detect any striation on any of the numerous boulders I had carefully examined.

It should have been added that I had always looked upon the unstratified yellowish clay and angular stones occupying the valley, and underlying the domes of blown sand, at Croyde, in North Devon, as being quite inexplicable except on the hypothesis of glacial—not necessarily glacier—action.

It is but fair to state here that several geologists have called attention to other phenomena which they believed to be effects of intense cold in Devonshire.

III. DR. DAWSON ON KENT'S CAVERN.

Dr. Dawson has the following remarks on Kent's Cavern in his "Story of the Earth and Man," published during the present year (1875).*

"The somewhat extensive and ramifying cavern of Kent's Hole is an irregular excavation, evidently due partly to

* "The Story of the Earth and Man." By J. W. Dawson, LL.D., F.R.S., F.G.S., Principal and Vice-Chancellor of McGill University, Montreal. London. 1875.

fissures in limestone rock, and partly to the erosive action of water enlarging such fissures into chambers and galleries. At what time it was originally cut we do not know, but it must have existed as a cavern at the close of the Pliocene or beginning of the Post-pliocene period, since which time it has been receiving a series of deposits which have quite filled up some of its smaller branches.

"First and lowest, according to Mr. Pengelly, is a 'breccia,' or mass of broken and rounded stones with hardened red clay filling the interstices. Most of the stones are of the rock which forms the roof and walls of the cave, but many, especially the rounded ones, are from more distant parts of the surrounding country. In this mass, the depth of which is unknown, are numerous bones, all of one kind of animal, the cave bear, a creature which seems to have lived in Western Europe from the close of the Pliocene down to the modern period. It must have been one of the earliest and most permanent tenants of Kent's Hole at a time when its lower chambers were still filled with water. Next above the breccia is a floor of 'stalagmite,' or stony carbonate of lime, deposited from the drippings of the roof, and in some places three feet thick. This also contains bones of the cave bear, deposited when there was less access of water to the cavern. Mr. Pengelly infers the existence of man at this time from a single flint flake and a single flint chip found in these beds; but mere flakes and chips of flint are too often natural to warrant such a conclusion.

"After the old stalagmite floor above mentioned was formed, the cave again received deposits of muddy water and stones; but now a change occurs in the remains embedded. This stony clay, or 'cave earth,' has yielded an immense quantity of teeth and bones, including those of the elephant, rhinoceros, horse, hyena, cave bear, reindeer, and Irish elk. With these were found weapons of chipped flint, and harpoons, needles, and bodkins of bone, precisely similar to those of the North American Indians and other rude races. The 'cave earth' is four feet or more in thickness. It is not stratified, and contains many fallen fragments of rock, rounded stones, and broken pieces of stalagmite. It also has patches of the excrement of hyenas, which the explorers suppose to indicate the temporary residence of these animals; and in one spot, near the top, is a limited layer of burnt wood, with remains which indicate the cooking and eating of repasts of animal food by man. It is clear that when this bed was formed the cavern was liable to be inundated with muddy water, carry-

ing stones and other heavy objects, and breaking up in places the old stalagmite floor. One of the most puzzling features, especially to those who take an exclusively uniformitarian view, is, that the entrance of water-borne mud and stones implies a level of the bottom of the water in the neighbouring valleys of about 100 feet above its present height. The cave earth is covered by a second crust of stalagmite, less dense and thick than that below, and containing only a few bones, which are of the same general character with those below, but include a fragment of a human jaw with teeth. Evidently, when this stalagmite was formed, the influx of water-borne materials had ceased, or nearly so; but whether the animals previously occupying the country still continued in it, or only accidental bones, etc., were introduced into the cave or lifted from the bed below, does not appear.

"The next bed marks a new change. It is a layer of black mould from three to ten inches thick. Its microscopic structure does not seem to have been examined; but it is probably a forest soil, introduced by growth, by water, by wind, and by ingress of animals, all of them modern, and works of art ranging from the old British times before the Roman invasion up to the porter bottles and dropped halfpence of modern visitors. Lastly, in and upon the black mould are many fallen blocks from the roof of the cave.

"There can be no doubt that this cave and the neighbouring one of Brixham have done very much to impress the minds of British geologists with ideas of the great antiquity of man; and they have, more than any other Post-glacial monuments, shown the existence of some animals now extinct up to the human age. Of precise data for determining time, they have, however, given nothing. The only measures which seem to have been applied, namely, the rate of growth of stalagmite and the rate of erosion of neighbouring valleys, are, from the very sequence of the deposits, obviously worthless; and the only apparently available constant measure, namely, the fall of blocks from the roof, seems not yet to have been applied. We are therefore quite uncertain as to the number of centuries involved in the filling of this cave, and must remain so until a surer system of calculation is adopted. We may, however, attempt to sketch the series of events which it indicates.

"The animals found in Kent's Hole are all 'Post-glacial.' They therefore inhabited the country after it rose from the great glacial submergence. Perhaps the first colonists of the coast of Devonshire in this period were the cave-bears, mi-

grating on floating ice, and subsisting like the Arctic bear, and the black bear of Anticosti, on fish, and on the garbage cast up by the sea. They found Kent's Hole a sea-side cavern, with perhaps some of its galleries still full of water and filling with breccia with which the bones of dead bears became mixed. As the land rose, these creatures for the most part betook themselves to lower levels, and in process of time the cavern stood upon a hill side, perhaps several hundreds of feet above the sea; and the mountain torrents, their beds not yet emptied of glacial detritus, washed into it stones and mud and carcasses of animals of many species which had now swarmed across the plains elevated out of the sea, and multiplied in the land. This was the time of the cave earth; and before its deposit was completed, though how long before, a confused and often-disturbed bed of this kind cannot tell, man himself seems to have been added to the inhabitants of the British land. In pursuit of game he sometimes ascended the valleys beyond the cavern, or even penetrated into its outer chambers; or perhaps there were even in those days rude and savage hill-men, inhabiting the forests and warring with the more cultivated denizens of plains below, which are now deep under the waters. Their weapons, lost in hunting, or buried in the flesh of wounded animals which crept to the streams to assuage their thirst, are those found in the cave earth. The absence of the human bones may merely show that the mighty hunters of those days were too hardy, athletic, and intelligent, often to perish from accidental causes, and that they did not use this cavern for a place of burial. But the land again subsided. The valley of that now nameless river, of which the Rhine, the Thames, and the Severn may have alike been tributaries, disappeared under the sea; and some tribe, driven from the lower lands, took refuge in this cave, now again near the encroaching waves, and left there the remains of their last repasts ere they were driven farther inland or engulfed in the waters. For a time the cavern may have been wholly submerged, and the charcoal of the extinguished fires became covered with its thin coating of clay. But ere long it re-emerged to form part of an island, long barren and desolate; and the valleys having been cut deeper by the receding waters, it no longer received muddy deposits, and the crust formed by drippings from its roof contained only bones and pebbles washed by rains and occasional land floods from its own clay deposits. Finally, the modern forests overspread the land, and were tenanted by the modern animals. Man re-

turned to use the cavern again as a place of refuge or habitation, and to leave there the relics contained in the black earth. This seems at present the only intelligible history of this curious cave and others resembling it; though, when we consider the imperfection of the results obtained even by a large amount of labour, and the difficult and confused character of the deposits in this and similar caves, too much value should not be attached to such histories, which may at any time be contradicted or modified by new facts or different explanations of those already known. The time involved depends very much . . . on the question whether we regard the Post-glacial subsidence and re-elevation as somewhat sudden, or as occupying long ages at the slow rate at which some parts of our continents are now rising or sinking.*

Before commencing any remarks on the foregoing quotation, it seems right to devote a word or two to the history of the work from which it is taken.

As already observed, it was published in 1875; but the author states in his preface that it originally appeared as a series of papers in the *Leisure Hour* and is now "reproduced with some amendments and extensions." (p. viii.) On turning to the *Leisure Hour* it will be found that the entire passage quoted above appeared in that periodical in December 1871 (No. 1040, pp. 773-4), and that the two accounts may be said to be identical, the later having undergone neither "amendment nor extension," so far as the facts and arguments are concerned. Indeed, the only differences are the following:—"Erosive" has been substituted in the reproduction, for "erosion" in the original; "in," for "with;" "waves," for "seas;" and "re-elevation," for "elevation." It is obvious that when the original was written the author could not have seen any of the Annual Reports of the Cavern Committee subsequent to the Sixth, read at Liverpool in 1870; and from internal evidence it may be safely concluded that the Fifth Report, read at Exeter in 1869, was that he chiefly if not exclusively used. This is to be regretted, as more recent Reports would probably have modified some of his statements if not his conclusions. He may, perhaps, have also seen "The Ancient Cave-Men of Devonshire," in *Chambers's Tracts* (1871).

But to return. The passage which has been cited suggests numerous remarks and on a variety of topics, but especially on—1. The Origin of the Cavern; 2. The Breccia; 3. The

* *Op. cit.* pp. 304-310.

animal remains found in the Breccia; 4. The Stalagmite overlying the Breccia and usually termed Crystalline; 5. The earliest evidence of human existence found in the Cavern; 6. The human industrial remains found in the Cave-Earth; 7. The charred wood found in the Cave-Earth; 8. The introduction of the Cave-Earth; 9. The animal remains found in the Granular Stalagmite; 10. The Physical Geography of the Cavern district; 11. The composition of the Black Mould; 12. Cavern Chronometers; 13. The era of the Cavern mammals; 14. The Glacial submergence of Devonshire; 15. The introduction of the mammalian remains; 16. The "confusion" of the Cave-Earth; 17. The condition of Devonshire men during the era of the Cave-Earth; 18. The introduction of the flint weapons; and 19. The Clay coating the Black Band.

1. *The Origin of the Cavern*:—There is little or nothing to object to in Dr. Dawson's statement that "Kent's Hole is an irregular excavation, . . . due partly to fissures in limestone rock, and partly to the erosive action of water enlarging such fissures into chambers and galleries," provided he does not, by "fissures," mean "gaping fissures," that is fissures at one time open to the day, as the unqualified word may lead some readers to suppose. The question is not unimportant, for Caverns have been divided into "Tunnel Caverns" and "Fissure Caverns;"* and it has been not unusual to conclude that the latter received their contents from above. Moreover, Mr. Mac Enery, its early and famous explorer, seems to have inclined to the opinion that Kent's Hole was formerly a Fissure Cavern: "A conjecture," he says, "may be hazarded that it assumed its present form from the junction of two opposite masses thrown together, whose lower extremities receded from each other as their summits met, the vacuum so produced becoming the cavern."† It is simply requisite, however, to study the roof from the interior of the Cavern itself, to learn that this view is utterly untenable, and that Kent's Hole is strictly a Tunnel Cavern. So far as my experience goes, all the limestone caverns of Devonshire have the directions of the "joints" of the district; that is those well-defined, superinduced, divisional planes passing through rocks, whether stratified or unstratified, in various definite directions, and dividing them into more or less regular solids having no tendency to illimitable division.

* See *Trans. Devon. Assoc.*, vol. vi. p. 784. 1874.

† *Ibid*, vol. iii. p. 360. 1869.

2. *The Breccia*:—The author of the work under notice, following the order of history, begins with the “Breccia,” or, so far as is at present known, the lowest and oldest of the Cavern deposits found *in situ*, and terms it the “first and lowest.” I have always preferred the opposite method and followed the order of discovery, beginning with the “Black Mould,” the uppermost or most modern deposit, and terming it the “first.” There can be no doubt that the historical order is to be preferred when we are certain of having the actual commencement of a series of terms, but as it is possible—and there are indications rendering it not improbable—that we may sooner or later find a deposit in the Cavern underlying the Breccia, we should live in the constant liability of having all our terminology deranged by finding a deposit prior to the “first” and lower than the “lowest.” Indeed, the earliest description of the Breccia in the annual Reports of the Committee, appointed by the British Association to explore Kent’s Hole, and which will shortly be quoted in full, contains evidence that the Breccia was not the “first” or “lowest” of the Cavern deposits, and the Report of the following year—that of 1869, which Dr. Dawson seems to have used—directs attention to that evidence.

According to the author, the “breccia is a mass of broken and rounded stones, with hardened red clay filling the interstices. Most of the stones are of the rock which forms the roof and walls of the Cave, but many, especially the rounded ones, are from distant parts of the surrounding country.” The following descriptions of this deposit occur in the “Fourth,” “Fifth,” “Eighth,” and “Ninth” of the Committee’s Annual Reports:—“A rock-like breccia composed of red earth, angular pieces of limestone, subangular and rounded pieces of grit in considerable numbers, blocks of crystalline stalagmite, and bones.” *

Again, “Dark-red earth, angular, subangular, and rounded pieces of grit not derivable from the Cavern-hill, but which the neighbouring and loftier Lincombe and Warberry hills can supply, angular pieces of limestone, and pieces of stalagmite (some of them of great size), which, of course, were remnants of a floor more ancient still than the Old Crystalline Floor which lay *above* the Breccia and below the Cave-earth. The points in which the Breccia differed from the Cave-earth were the darker colour of the red soil forming its staple, and the much greater prevalence of fragments of grit.” * In the same Report the term “Older Stalagmite” was applied to the

* *Report Brit. Assoc.*, 1868, p. 51.

blocks of that material found in the Breccia, to distinguish them from the "Old Stalagmite" which lay on and covered that deposit.*

Again, "Dark-red rock-like Breccia, at least largely composed of angular, subangular, and rounded fragments of Devonian grit, derivable from the adjacent loftier hills, but not from the comparatively low one in which the Cavern occurs."† Further, "Angular, subangular, and rounded pebbles of dark-red grit, with sandy mud derived from their attrition."†

Again, "The Breccia, or older deposit, consists of rounded and subangular fragments of dark-red grit imbedded in a sandy paste of the same colour."‡

It will be seen from the foregoing quotations that, first, whilst, in some of the descriptions, angular pieces of limestone are mentioned amongst the components of the Breccia, there was nothing in either of them to justify the statement—which proves to be far from correct—that most of the stones are of the rock which forms the roof and walls of the Cave; and, second, that the pieces of stalagmite incorporated in the Breccia may be taken as clear evidence that the Breccia was neither the "first" nor "lowest" deposit of the Cavern deposits.

3. *The animal remains found in the Breccia*:—"In this mass" [the Breccia], says Dr. Dawson, "are numerous bones, all of one kind of animal, the cave-bear;" and it must be admitted that the language employed in the Committee's Fourth Report, read at Norwich in 1868, justified the statement. Within the following year, however, the discovery of more than one *ursine* species rendered it necessary to write more cautiously; and in the Fifth Report, read at Exeter in 1869, which the author had certainly seen, and, at least, chiefly used, the remains in the Breccia are described as being "so far as is known, exclusively those of Bear." Equivalent expressions were employed in 1872 (p. 43), 1873 (p. 203), and 1874 (p. 5); but since the meeting held at Belfast in August 1874, a very few teeth of a large *Felis*, probably *F. spelæa*, and of the common Fox, have been found in the same deposit.

4. *The Crystalline Stalagmite, overlying the Breccia*:—"The author states that "next above the breccia is a floor of 'stalagmite' in some places three feet thick;" a description calculated to convey the idea that the maximum

* *Report Brit. Assoc.*, 1869, p. 199. † *Ibid*, 1872, pp. 41-2.

‡ *Ibid*, 1873, p. 203.

thickness did not exceed that amount. It is difficult to understand whence this impression was derived, for in the Fifth Report, that of 1869, this Stalagmite is described as being "in some cases upwards of 12 feet thick."*

5. *The earliest evidence of human existence found in the Cavern*:—"Next above the breccia," says Dr. Dawson, "is a floor of stalagmite. . . . This also contains bones of the cave bear. . . . Mr. Pengelly infers the existence of man at this time from a single flint flake and a single flint chip found in these beds; but mere flakes and chips of flint are too often natural to warrant such a conclusion." The reader would, of course, be led to the following conclusions by the foregoing passage:—(a) That the "this time" spoken of was that of the Stalagmite "next above the breccia;" (b) That sufficient care had not been taken to determine whether the flake were artificial or natural; and (c) That the flint chip formed part of the evidence from which "the existence of man at this time" had been inferred."

What was usually regarded as one of the ends of the Cavern was a narrow gallery between almost vertical limestone walls, the greater part of which was occupied by a pool or "Lake" of water, about 20 feet long, 8 feet broad, and, as was ultimately found, from 4 to 5 feet deep. The course of the investigation by the Committee appointed by the British Association, being near, and in the direction of the lake, it became necessary in 1869 to draw off the water, when the basin was found to contain a mass of true Cave-Earth with remains of various species of mammals, the whole lying on a thick floor or bottom of Crystalline Stalagmite, which, as in all other instances, rested at once on the Breccia. The Cave-Earth was removed and carefully examined, but the lake basin was left completely intact, and the excavators burrowed horizontally beneath it, forming a passage to which the name of the "Water Gallery" was given. From this point, the simplest course will be to quote entire the account given in the Fifth Report of the facts and speculations connected with the flint flake under consideration:—

"In their Fourth Report, the Committee . . . remarked, 'Up to this time the Rock-like Breccia has been utterly silent on the question of the existence of Man; it has given up no tools or chips of flint or bone, no charred wood or bones, no bones split longitudinally, no stones suggesting that they had been used as hammers or crushers. But whilst

* *Report Brit. Assoc.*, 1869, p. 201

they have before them the lessons so emphatically taught by the exploration of the Cavern, the Committee cannot but think that it would be premature to draw at present any inference from this negative fact.*

"The cautiousness inculcated in this passage received its justification on March 5, 1869, when a flint flake (No. 3991*) was discovered in the Breccia in question, in the Water Gallery. The particulars of this discovery were forwarded to Sir Charles Lyell, Chairman of the Committee, by the Superintendents, in the following passage in their Monthly Report, dated April 8, 1869:—"It was found with portions of the teeth of the Cave-bear, lying on a loose block of limestone, in contact with the north wall of the Gallery, in the third foot-level; that is from 2 to 3 feet below the surface of the Breccia. A section at right angles to its longest axis would be a scalene triangle. The face of the flake represented by the smallest side is the natural surface of the flint nodule from which the specimen was struck. It required no more than three or, at most, four blows to produce it. On its larger face the bulb of percussion is well pronounced. It is partially coated with a thin ferruginous film, occasionally dendritic, and resembling that which commonly coats the pebbles found in the Breccia. Beneath this partial envelope it is of a light buff colour. Its aspect is unlike that of any implements or flakes found in the Cave-Earth. None of its edges can be said to be keen, yet it does not appear to have been rolled. One well-rolled small flint pebble occurred in the Breccia in the [Water] Gallery.

"Though the flake cannot be regarded as a fine specimen, we think there is little or no doubt that it was formed by human agency; and assuming this to be the case, it appears to us to be of very great value, as it was found in a deposit not only older than the ordinary implement-bearing Cave-Earth, but separated from it by the old [Stalagmitic] Floor, which in some cases was upwards of 12 feet thick, and which is certainly of great thickness immediately above the spot where the flake lay. In fact, it was found in a deposit which, so far as the Cave evidence goes, was laid down before the introduction of that in which were entombed the first traces of the Cave-hyæna, Cave-lion, Mammoth, and their contemporaries.

"Being impressed with the probably great importance of the discovery, we carefully addressed ourselves to the question,

* The numbers applied to the Cavern specimens are those, not of the specimens themselves, but of the "finds" of which they form part.

'Did the flake originally belong to the comparatively modern Cave-Earth in the lake above, and find its way through some crevice in the Old [Stalagmitic] Floor which forms the ceiling of the [Water] Gallery?' To this important question we are prepared to give a negative reply; for—

"1st. No crevice or hole of any kind is discoverable in either the upper or lower surface of the ceiling or *Old* [Stalagmitic] Floor.

"2nd. The flake was found, not vertically beneath any part of the Lake, but fully a yard beyond its nearest margin.

"3rd. It did not lie on the surface of the deposit [*i.e.* the Breccia] but from 2 to 3 feet beneath it.

"4th. If the flake was originally lodged in the Cave-Earth found in the Lake, it must have been the only one deposited there; for when we carefully and completely emptied the Lake no flint implement [or flake] was met with.

"5th. If the flake had found its way through the Stalagmite, it might have been expected that some such bones as were found in the lake (Horse and Mammoth, for example) would have descended through the same crevice; but instead of this the remains of the Cave-bear alone were met with in the Breccia, and teeth of this animal were found in contact with the flake itself.

"In short, there is no crevice through which the object could have passed; if it descended through the floor it descended alone; and if it did so descend, it ought not to have been where it was found. We have no hesitation in stating that the flake is of the same age as the Breccia which contained it; and that if our opinion of its human origin is confirmed, it is anthropologically by far the most important object the Cavern has yielded!

"On June 3rd, 1869, the flake was submitted to Mr. John Evans, F.R.S., a member of the Committee. He drew up the following statement, with the intention that it should be inserted in the present Report:—'No. 3991 is undoubtedly of human workmanship. It is a flake of flint from the chalk, one of the smaller facets of which shows the natural crust of the nodule from which it was struck. The other external facet shows the characteristic depression arising from the bulb of percussion on the flake previously removed to form this facet. The flat or internal face of the flake shows a well-developed bulb, and the large but-end where the blow was struck has been fashioned by two or three blows. It has therefore taken four or five blows, each administered with a purpose in view, to produce this instrument.

"Not only, however, has it been artificially made, but it carries upon it evidence of having been in use as a tool; for the edge produced by the intersection of the two principal artificial faces is worn away along its entire length, and exhibits the slightly jagged appearance produced by the breaking off of the sharp edge, such as I find by experience to result from scraping bone or other hard substances with the edge of a flint flake.—(Signed) JOHN EVANS.—June 3, 1869."

"Besides the above, a small perfectly angular piece of coarse-grained white flint (No. 4037*a*) was discovered in the first foot-level of the Breccia in the Water Gallery on Friday, April 23, 1869. It has all the aspect of having been struck off in making an implement."*

The statement just quoted, the only one made by the Cavern Committee respecting the flake under notice, appears to show clearly and conclusively (*a*) That the time to which the specimen belonged was that represented, not by the Old or Crystalline Stalagmite, but by the underlying and more ancient Breccia; (*b*) That ample care had been taken to determine the artificial or natural character of the flake, and that the unqualified determination, by probably the most competent expert in Europe, had been in favour of its artificial origin; and (*c*) That the evidence from which the existence of man at that early period had been inferred, was the flake alone.

As Dr. Dawson never saw the flake, and as he does not appear to question the soundness of the inference provided the artificial character of the flake is established, it cannot but be of interest to state that after presenting their Fifth Report, at the Exeter Meeting in 1869, the Committee's researches did not again bring them into contact with the Breccia until May, 1872, when two flint *implements* (Nos. 5900 and 5903)—not mere *flakes*—were discovered in the same old deposit, and described in the Eighth Report, read at Brighton in 1872.† In the following year the Committee reported at Bradford the discovery of nine additional implements, besides flakes and chips;‡ and in 1874 they announced at the Belfast meeting that the Breccia had yielded 26 additional specimens of implements, flakes, and chips,§ to one of which (No. 6411)|| they called attention as being one

* *Report Brit. Assoc.*, 1869, pp. 201-2.

† *Ibid*, 1872, p. 44.

† *Ibid*, 1873, pp. 206-7.

§ *Ibid*, 1874, pp. 5-16.

|| In the case of numbers in the fractional form, the denominator denotes the "find," and the numerator the specimen; in this case, for example, the implement is that numbered 1, in the "find" 6411.

of the finest the Cavern had yielded from the commencement, and found in the Breccia at the greatest depth to which the excavation had been carried. Though the Tenth Report, presented in 1874, has long been in type, the annual volume of the British Association, in which it is to appear, has not yet been published, a full abstract of it, containing a detailed description of the tool just mentioned, was printed in "Nature" for 29th October, 1874. It may be added that a very fine chert implement (No. 6550) was found in the second foot-level in the Breccia on the 16th February, 1875.

It cannot be doubted that had the numerous discoveries made since 1869, and before "The Story of the Earth and Man" was "reproduced," come under Dr. Dawson's attention, he would readily have acknowledged that they were amply sufficient "to warrant" the conclusion to which I had been led by the solitary flake of 1869.

6. *The human industrial remains found in the Cave-Earth:*—Having named some of the different kinds of mammals represented by the remains in the Cave-Earth, Dr. Dawson adds, "With these were found weapons of chipped flint, and harpoons, needles, and bodkins of bone, precisely similar to those of the North American Indians and other rude races." At the Birmingham Meeting of the British Association in 1865, I had the pleasure of showing him the human industrial remains which the Committee had then found in the Cavern, when their researches had extended over five months only. They consisted of flint implements, one "whetstone," and one hammer-stone, the last of which was at the time pointed out by Dr. Dawson as "precisely similar to those of the North American Indians," and, unless my memory misleads me, he produced specimens fully justifying his statement. No bone tools had at that time been found in the Cavern. As I have not been so fortunate as to meet the Doctor since that time, and as none of the Cavern objects were figured prior to 1872, when Mr. John Evans gave excellent representations in his "Ancient Stone Implements, etc., of Great Britain" of many of those of an artificial character which had been discovered up to that time, I confess to being puzzled to understand how he was enabled to discover the precise resemblance of the Cavern harpoons, needles, and bodkins of bone "to those of the North American Indians and other rude races." A figure of a "harpoon," however, is given in "The Ancient Cave-Men of Devonshire,"

in *Chambers's Tracts*, already mentioned, and is stated to be "strikingly like the best found in Kent's Hole."

The bone implements hitherto detected in the Cave-Earth are seven in number, the particulars of which are set forth in the following table:—

No.	Object.	When found.	Reference.
1835	Awl.	27th Nov., 1866	<i>Report Brit. Assoc.</i> , 1867, p. 29.
1847	Bodkin or Needle.	4th Dec. "	<i>Ibid</i> , " 1869, p. 191.
1929	Pin.	3rd Jan., 1867	<i>Ibid</i> , " 1867, p. 31.
1970	Harpoon, barbed on one side only.	18th " "	<i>Ibid</i> , " 1867, p. 29.
2067	Perforated Canine of Badger.	4th Feb. "	<i>Ibid</i> , " 1869, p. 192.
2206	Harpoon, barbed on one side only.	7th March "	<i>Ibid</i> , " 1869, p. 191.
2282	Harpoon, barbed on both sides.	18th " "	<i>Ibid</i> , " 1867, p. 31.

7. *The charred wood found in the Cave-Earth*:—In his description of the Cave-Earth the author says, "In one spot near the top is a limited layer of burnt wood." The following is the description of this layer given by the Committee in their Third Report, read at the Dundee Meeting, in 1867:—"This layer, termed the 'Black Band,' was of irregular outline, and covered an area of about 100 square feet. It contained numerous bits of charcoal, and varied in thickness from 2 to 6 inches. Throughout about half of its area, it immediately underlay the Stalagmite, but elsewhere it was separated from the nether surface of the floor by a layer of ordinary Red Cave-Earth, from 3 to 6 inches in thickness. At its nearest approach, it was 32 feet from the northern entrance; but as a great part of the intermediate ground had been broken by the early explorers, it is impossible to say whether or not it formerly extended further in that direction."* It must not be supposed that this layer was the only indication of fire found in the Cave-Earth, for in the Report from which the foregoing quotation is taken, it is stated that "fragments of burnt bone [and wood] have been found, here and there, in the Cave-Earth in every chamber and gallery;"† and the statement remains to be true at the end of ten years' continuous exploration. It may be neither out of place, nor without interest, to remark that no traces of fire have yet been met with in the Breccia.

* *Report Brit. Assoc.*, 1867, p. 27.

† *Ibid*, p. 30.

8. *The introduction of the Cave-Earth*:—"It is clear," says Dr. Dawson, "that when this bed was formed the Cavern was liable to be inundated with muddy water, carrying stones and other heavy objects, and breaking up in places the old stalagmite floor." This passage appears to be correctly paraphrased by the three following statements:—(a) The red loam of the Cave-Earth was at least mainly derived from sources external to the Cavern, and was introduced by occasional inundations; (b) The water also carried in stones and other heavy objects; and (c) The breaking up of the old Stalagmite was due to these inundations. The first is the opinion I have always held and advanced on the subject, and was that also of Mr. Mac Enery, the great predecessor of the Cavern exploring Committee. With regard to the second, there can be no doubt that such of the stones in the Cave-Earth as were neither derived from the roof and walls of the Cavern, nor from the Breccia already lodged in it, nor were taken in by man for useful purposes, were introduced by the water which carried in the red loam; but this residue would probably be inconsiderable, and would certainly not require powerful propulsion. I am incapable of even guessing what the "other heavy objects" were, as nothing of the kind was met with by the exploring Committee. I cannot but decline to accept the suggestion that the inundating waters broke up the Old Stalagmite, for, as will be subsequently shown, there are reasons for believing that the inundations were by no means of a powerful character, and it is certain that the breaking up was continued long after the introduction of the Cave-earth had ceased, for large blocks of the Old Stalagmite were not unfrequently found entirely incorporated within the New, whilst others were lying in an inclined position with one end lodged in, but not below, the New Floor, and the other rising above its upper surface.

9. *The animal remains found in the upper or Granular Stalagmite*:—Our author says:—"The Cave-Earth is covered by a second crust of Stalagmite containing only a few bones, which are of the same general character with those below but whether the animals previously occupying the country still continued in it, or only accidental bones, etc., were introduced into the cave or lifted from the bed below, does not appear." I am aware of no reason for doubting that the remains found in this Stalagmite represented species of animals living in the country during the period when the calcareous sheet was in process of formation;

or, to use the author's language, that "the animals previously occupying the country still continued in it" [during the era of the stalagmite]. Could a reasonable scepticism be entertained on this question, it might be fairly extended to the still older deposits, and the remains found in each and all successively referred to some older bed as their primary tomb.

What is meant by "accidental bones being introduced into the Cave," I have no clear idea. The expression admits apparently of but two explanations:—The occasional introduction of a bone, (a) of a contemporary animal which had recently died; or, (b) of an extinct animal dislodged from some ossiferous bed without the Cavern. The first, however, cannot be the author's meaning, since it is the hypothesis he has already mentioned and proposed to leave on one side. To the second there appear to be sundry objections.

If there were such ossiferous beds outside the Cavern, it might be expected that there would still be some remnants of them, and that during the numerous excavations for architectural purposes on all sides of the Cavern hill, bones of the kind would occasionally be disinterred. It is true that from time to time bones have been brought me from such excavations, but they have invariably been those not of extinct, but of existing species, and having an unmistakably recent aspect. But waiving all this. By what agency could such bones be introduced? It cannot be supposed that any animal living in the Cavern would be at the pains to take home a bone washed out of a heap of detritus, and destitute of flesh, marrow, and gelatine; and I quite concur in Dr. Dawson's opinion that "evidently, when this stalagmite was found the influx of water-borne materials had ceased, or nearly so." Indeed, the formation of such a continuous sheet, as well as the character of the sheet itself, seems incompatible with even an occasional influx. If the animals now extinct did not continue to occupy the country after the close of the Cave-Earth era, the bones found in the Stalagmite ought to be, at least, mainly such as occur in the overlying Black Mould, not in the underlying Cave-earth, whereas the contrary is the well-known fact. It may be interesting to remark that the few flint tools found in the upper Stalagmite were, with one doubtful exception, all of the Palæolithic type. The Neolithic age does not appear to be represented by the artificial objects found in the Cavern.

As to the suggestion that the bones in question may have been "lifted from the bed [of Cave-earth] below," it seems only necessary to ask two questions:—1st. By what agency

were they "lifted"? We are told, that "evidently, when this stalagmite was formed, the influx of water-borne materials had ceased," and I cordially concur in this opinion, as already stated. 2nd. Assuming the influx, how did it, or indeed, any other "lifting" agent, get access to the Cave-earth? I have found teeth of the Mammoth, tichorhine Rhinoceros, Cave-bear, and Cave-hyæna so near the upper surface of the stalagmite as to be but partially covered by it, whilst beneath them there was a continuous sheet of the same material fully 20 inches thick, completely sealing up the Cave-earth below.

10. *The physical geography of the Cavern district*:—Dr. Dawson supposes of the man of the Cave-earth era, that, "in pursuit of game he sometimes *ascended the valleys beyond the Cavern*." Whilst readily admitting that this may be very probable, it carries with it the assumption that the physical geography of the district must have undergone considerable changes since that era, and that these, by absorbing a large amount of time, push Devonshire man back into a remote antiquity.

11. *The composition of the Black Mould*:—The author has correctly surmised that the microscopic structure of the Black Mould overlying the Upper or Graunlar Stalagmite has not been examined. This, though no doubt it would have been of interest, was not necessary to determine the composition of the bed, which consisted of decayed leaves of trees and shrubs blown in through the entrances; materials brought in by animals to make or improve their dormitories; animal droppings; remnants of food; half-burnt sticks and other results of fires; scraps left by pic-nic and bacchanalian parties; and the ordinary contents of the middens, or *mixens*, of such persons as were at least occasionally more permanent occupants in comparatively modern times. The Black Mould extended continuously throughout the whole of the chambers into which the two external entrances of the Cavern opened, as well as those immediately contiguous; but there was no trace of it in those more remote.

12. *Cavern Chronometers*:—"There can be no doubt," says Dr. Dawson, "that this cave [of Kent's Hole] and the neighbouring one of Brixham have done very much to impress the minds of British geologists with ideas of the great antiquity of man. . . . Of precise data for determining time, they have, however, given nothing. The only measures which

seem to have been applied, namely the rate of growth of stalagmite and the rate of erosion of the neighbouring valleys, are, from the very sequence of the deposits, obviously worthless; and the only apparently available constant measure, namely the fall of blocks from the roof, seems not yet to have been applied. We are therefore quite uncertain as to the number of centuries involved in the filling of this cave, and must remain so until a surer system of calculation is adopted."

Until reading the foregoing paragraph, I had no idea that any one had ever "applied the rate of the erosion of the valleys" in the neighbourhood of the Torbay caverns as "precise data for determining time;" and it is difficult to see how that of which every one is utterly ignorant could be thus applied. It may be safely stated that no one has, or professes to have, the remotest idea of the rate of the erosion of these valleys, or whether, indeed, they have been eroded at all, within historic times. In a lecture "On the Insulation of St. Michael's Mount, Cornwall," delivered at the Royal Institution, London, April 5, 1867, I endeavoured to show "that since the Cave-earth was carried into the [Brixham] Cavern, the following changes have been wrought in the district:—

"1st and earliest. The depth of the valley has been increased by at least one hundred feet.

"2nd. The excavated valley was partially refilled by the lodgment in it of a thick mass of blue clay.

"3rd. In this clay grew a forest which afforded food and shelter to numerous animals, some of which belonged to species now extinct.

"4th. The entire country underwent a slow, tranquil, and uniform subsidence, to the extent of at least forty feet.

"Though the time required for, and represented by, these changes must be great, it fails to fill the interval between the present day and the earliest traces of man in Devonshire; for since the last adjustment of the relative level of sea and land the waves have cut back the cliffs until they have formed a foreshore which, in some cases even where the rocks are hard and crystalline, is more than half a mile in width. This strand constitutes a *fifth* change since the advent of man in south-western England."* I ventured to express the same opinion, almost in the same words, in a paper on "The Antiquity of Man in the South-west of England," read to the Devonshire Association at Barnstaple in July, 1867, when I distinctly stated my belief that "at present it

* See "Notices of the Proceedings of the Royal Institution of Great Britain," vol. v., 1866-1869, p. 129.

is impossible to convert geological time into astronomical,"* and that "all that the geologist can at present hope to do in the way of determining the distance in time of a recent geological event, is to prove a minimum."†

Whilst every one must agree with the author that "the rate of growth of stalagmite" fails to give us the number of centuries involved in the filling of Kent's Cavern, I am not prepared to admit that it is "obviously worthless," *when applied to the measurement of the time which the growing mass of stalagmite represents*. Care being taken to ascertain the actual rate at which, for a considerable period, a definite mass of stalagmite has actually grown; to determine the total volume of the said mass; and to apply this rate, not to volumes of stalagmite in other caverns, or in other branches of the same cavern, or even to other masses in the same branch of the same cavern, but simply and exclusively to the mass whose rate it is, I decidedly incline to the opinion that the result, instead of being worthless, would be of very great value. To take a solitary case, and that perhaps not the strongest that might be taken; it is a well-established fact that there is in Kent's Hole an enormous mass of stalagmite on which stalagmitic matter is constantly being added, but at such a rate that the increased thickness since February 20th, 1688, has not exceeded .05 inch. By applying this rate to the mass to which, and to which alone, it can be applicable, we get a total number of years which would probably appal those who are not familiar with such topics. This vast period, however, would be no more than the time represented by the Upper or Granular Stalagmite to which the mass in question belongs; but whilst it would leave us "quite uncertain as to the number of centuries involved in the filling of the cave," inasmuch as it has nothing whatever to do with the earlier eras of which the successive underlying deposits are the exponents, or to use the author's words, "from the sequence of the deposits," it would be very ungrateful to pronounce it "worthless" in return for the information it had afforded respecting the probable value of one term in the series. At least it would have determined a minimum value of human antiquity, and might of itself suffice to show whether or not the commonly received opinions on the question were or were not worthless.

Turning, now, to Dr. Dawson's proposed chronometer—the

* *Trans. Devon. Assoc.*, 1867, vol. ii. p. 131. See also "The Ancient Cave-Men of Devonshire," in *Chambers's Miscellany of Tracts*, 1872, pp. 26-7.

† *Ibid*, p. 132.

fall of blocks from the roof and walls—it is obvious that it assumes that the fall of stones from the roof and walls of the Cavern has been uniform throughout the entire period its successive deposits represent; that all that have fallen are still where they fell; and, that it is possible to determine the exact deposit to which a given stone belongs. I confess to serious doubts on each of these points.

Before forming any opinion as to the general uniformity of the rate of fall, it appears necessary to ascertain to what the fall was due. Earthquakes have been suggested by some, and they may perhaps have had a share in the work, though it may be well to state that the concussions produced by blasting a great number of the fallen blocks in question in course of the exploration now in progress, has never, so far as is known, brought down a single splinter from the roof or walls during the last ten years. A careful study of the case has led me to the conclusion that *the* cause whose operation has at least chiefly produced these falls, is water containing carbonic acid, which, percolating through the rock along the joint planes, slowly dissolves the carbonate of lime until a block is so nearly detached from the bed of which it forms a part that its own weight is all that is required to bring it down. Whilst the foregoing agency appears to me amply sufficient to account for all the phenomena, and is an agency known to be in operation, it cannot be doubted that earthquake tremors would facilitate the fall of blocks already nearly severed from the beds. There is in the Cavern more than one well known block apparently hanging in jeopardy. It is scarcely possible to suppose that this action of acidulated water has ever been dormant, though, possibly from several causes, it may have varied somewhat in energy at different periods. It may also be true that, during the time represented by the Cavern deposits, earthquake shocks may have been tolerably uniform in the frequency and intensity of their visits to South Devon; on this question, however, we have no data whatever. But granting all this for the sake of the argument, it does not appear to me that equal quantities of equally acidulated water, and equal numbers of equally powerful earthquakes, would necessarily send down equal weights of limestone in equal times, since much would probably depend on the volume of the fragments. For example, and to take a very simple one, let the lowermost beds of limestone in the roof, those which may be termed the "*Ceiling*," in two different parts of the Cavern, be identical in structure, composition, and every other particular with the exceptions

only that one is two feet thick whilst the other is but one foot, and that the latter has twice as many close-fitting joints as the former. Let equally acidulated water be fretting a rectangular block, two feet long and two broad, out of the thick bed, and another such mass, one foot in length and breadth, out of the thin one. The first will be a cube two feet in the side and containing eight cubic feet, whilst the second, also a cube, will be one foot in the side and will contain one cubic foot. The weight of the larger block will obviously be eight times that of the smaller. The stipulations already made, presuppose that the joint planes along which the fretting agent acts are at right angles to the planes of bedding and to one another, hence each block will have four vertical or lateral faces; but in the case of the larger mass each face will measure four square feet ($= 2 \times 2$), and in that of the smaller only one square foot ($= 1 \times 1$); so that the aggregate lateral surface in the one case will be sixteen square feet, and in the other no more than four. As the fretting action will be confined to, and co-extensive with, these lateral faces, it is obvious that the amounts of work to be done in the two cases are as 16 to 4, that is the dissolving work will be four times as great in the one case as in the other. Let it be further supposed that the water has free access along the entire joint lines which on the upper surface in each case intersect and define the block, and that it is equally supplied to every point in these lines; it is obvious that the united lengths of the four bounding lines or upper horizontal edges will be eight feet ($= 4 \times 2$) in the case of the larger block, and four feet ($= 4 \times 1$) in that of the smaller. In other words, the amount of water fretting out the larger block will be twice that engaged on the smaller. In the larger block, however, there is, as already stated, four times the work to be done, and therefore a double time will have to be expended on it. If, therefore, the small block is corroded out in one unit of time, say in one year, the larger will require two such units, that is two years. In short, in the case of the small block one unit of weight would be brought down in a year, whilst in that of the latter eight times that weight would fall in two years; hence in equal times, four times as great a weight would fall in the case of the large block as would fall in that of the small one. It cannot be doubted, then, that the example shows that the volume of the fragments is a very important element in the problem, and that it justifies the generalization that, all other things being the same, more time will be required to bring down, by the action of

acidulated water, a given weight of limestone in small pieces than in large ones. There is, moreover, another consideration which will be found to strengthen this generalization. It is obvious that *complete* severance is not requisite, and, indeed, could not be effected, before the fall, as the blocks would be thrown down, as soon as the parts remaining intact ceased to be strong enough to support the weight. Returning to the examples already employed in illustration, let it be supposed that the breaking point is reached in the case of the smaller block as soon as the corrosive action has left but one square foot of surface intact; then, since the weight of the larger block is eight times that of the smaller, it will require eight square feet of surface to be left uncorroded in order that it may not fall. But since the entire lateral surface of the blocks are four and sixteen square feet respectively, the smaller block will not fall until three-fourths of its lateral surface has been fretted away, whilst the larger will be thrown down as soon as half of its lateral surface has been removed. In other words, the amounts of work to be done are not, as we at first supposed, as 16 : 4, *i.e.* 8 : 2, but as $\frac{1}{2}$ of 16 : $\frac{3}{4}$ of 4, *i.e.* 8 : 3. Relatively, therefore, the work to be done to detach the smaller block is 50 per cent. greater even than at first it was supposed. Should it be objected that the author's suggestion was, not to take the weight of fragments falling on different areas at the same time, but on the same area at different times, it may be replied that by cutting a block out of a bed, the new bed necessarily exposed thereby over the same area, would in all probability differ from the old one quite as much in thickness and number of joints as two beds over distinct areas.

It must not be forgotten, however, that another, and very different agent may have been at work in the Cavern in earlier times. The present temperature of the Cavern is the same by night and by day, in summer and in winter, and is very nearly that of the external mean annual temperature of the district. If during the comparatively recent geological period of which glacialists speak, when icebergs floated in British waters or glaciers occupied the Welsh valleys, the mean annual temperature of this district were that of freezing water—and that this was not improbably the case seems to be shown by Prof. Prestwick's researches*—that would then have been the constant temperature of the Cavern; and water, finding its way to the interior surface of the rock, would become frozen, when, taking the present state of this surface

* See *Phil. Trans.*, 1864, part ii. p. 281.

as a guide, it can scarcely be doubted that a single year would witness the fall of a vast number of fragments. This, if it ever existed, has long ceased to be the state of things, and has been succeeded by a condition such, that though the attention of the workmen was directed to the subject at the commencement of the exploration in March, 1865, they are not aware that a single stone, large or small, has fallen during the entire interval. With these facts and considerations before me, I cannot but decline to join in the assumption that the fall of limestone fragments has made such an approximation to uniformity as to render it available as a chronometer.

Dr. Dawson, it will be remembered, supposes that during the era of the Cave-earth, "mountain torrents, their beds not emptied of glacial detritus, washed into [the Cavern] stones and mud;" and that he speaks of the Cave-earth as a "confused and often disturbed bed." I know of no reason for accepting these views, which may be more fully considered subsequently, but they appear to be inconsistent with the assumption that the fallen stones are to be found where they originally fell. But whether such currents did or did not sweep through the Cavern in the Cave-earth era, there is no doubt that before the introduction of the Cave-earth commenced vast quantities of the Breccia or older deposit, as well as of the Crystalline Stalagmite which covered it, were dislodged and transported to other parts of the Cavern, whilst much of them appears to have been carried to the exterior. Though limestone fragments are by no means a conspicuous constituent of these older accumulations, they do occur in them, and certainly, in some cases, are not now to be found in the areas on which they fell from the roof and walls. The blocks of limestone vary from mere chips not weighing an ounce to masses weighing, by estimation, upwards of one hundred tons each; and there is no part of the Cavern, nor any one of the deposits, in which they may not be expected to be met with. The large blocks lie at all angles to the horizon, and some of them must have prevented small fragments which fell on them from occupying the areas to which they may be said to have belonged, by reflecting them to others where they had no right to be; thereby co-operating with the dislodgments already spoken of to render the suggested chronometer untrustworthy.

Many of the large blocks just mentioned have their lower ends in one deposit—frequently the lowest at present known—whence they project upwards through higher accumula-

tions, and occasionally rise above the entire series. In addition to warding off falling fragments from certain areas and unduly loading others with them, as already mentioned, these large masses would present the further difficulties, first, of being unmanageably ponderous, and, second, of uncertainty respecting the deposit and era to which they belonged. For example, suppose a block to penetrate to the depth of a foot into the Breccia, and to rise thence to the height also of a foot in the overlying Crystalline Stalagmite. It is possible that the twelve inches of Breccia in which its lower end was buried may have accumulated after the fall of the block, in which case the weight of the entire mass should be placed to the credit of the Breccia; but if, as is also possible, the momentum of such a falling block had driven it a foot deep into the already deposited Breccia, the Crystalline Stalagmite should be credited with the weight; and it would be very difficult, probably quite impossible, to determine the truth in such cases. Of course, it is easy to say that such doubtful areas must be rejected; but practically this would amount to saying that the experiment must be abandoned; for experience has shown that in every part of the Cavern such equivocal blocks would almost certainly present themselves, sooner or later, in any section passing through the entire series of deposits.

Before giving it to the world, Dr. Dawson was so good as to suggest to me his method "for determining time," in a letter dated "Montreal, July 3, 1871," and I confess that I was much taken with it at first; but on thinking the matter out, some of the objections stated above presented themselves with so much force that in my reply, dated "August 29, 1871," I had to tell him that I feared the suggestion was of no value; and further consideration of the subject has confirmed me in this opinion.

It may not be out of place to remark that taking the fact that, so far as experience goes, not even a single ounce has fallen in ten years, the entire mass thrown down measured at the rate of upwards of ten years per ounce, would probably give to the Breccia, and hence to Devonshire man, an antiquity fully as great as that suggested by any other consideration.

13. *The era of the Cavern Mammals*.—Though it is quite true, as the author states, that "the animals found in Kent's Hole are all 'Post-glacial,'" it is equally true that many of them are also "Pre-glacial." In Mr. Boyd Dawkins's list of British Pre-glacial Mammals found in the famous Forest-bed

of Cromer, are the following, which occur in Kent's Cavern, according to the same palæontologist:—*Castor fiber*, = Beaver; *Ursus spelæus*, = Cave-bear; *Canis lupus*, = Wolf; *C. Vulpes*, = Fox; *Cervus megaceros*, = Gigantic Irish deer; *C. capreolus*, = Roebuck; *C. elaphus*, = Red deer; *Bos primigenius*, = Wild Bull; *Equus caballus*, = Horse; and *Elephas primigenius*, = Mammoth. Remains of an undetermined species of *Machairodus* have also been found in the Forest-bed, and may perhaps be identical with *M. latidens* of Kent's Cavern.

14. *The Glacial submergence of Devonshire*:—In his "attempt to sketch the series of events which the cavern indicates," Dr. Dawson assumes that "the country rose from the great Glacial submergence," and Kent's Hole became "a sea-side cavern, with perhaps some of its galleries still full of water, and filling with breccia;" and that, after the deposition of the Breccia, the Crystalline Stalagmite, and the Cave-earth, "the land again subsided," when, "for a time the cavern may have been wholly submerged." Most British geologists hesitate to admit that the land south of the Thames and Bristol Channel shared in the Glacial submergences; and on the supposition that it did so, it is, no doubt, at least a little puzzling to find within the Cavern no marine shells or other such evidence of the fact. Notwithstanding this puzzle, my own opinion is, as stated elsewhere,* that Devonshire did share in the subsidence so far, at least, as to submerge all but its loftier eminences; but it appears to me that this took place but once during the period embraced by the Cavern history as known to us, and that it was subsequent to the era of the Breccia, but prior to that of the Cave-earth. It would have been interesting to have had a statement of the facts on which either of the supposed two comparatively recent submergences of Devonshire is based.

15. *The introduction of the Mammalian remains*:—The author supposes that during the introduction of the Cave-earth, "mountain torrents . . . washed into [the Cavern] . . . carcasses of animals of many species." When he speaks of "patches of the excrement of hyænas, which the explorers suppose to indicate the temporary residence of these animals," it is scarcely possible to resist the belief that he is sceptical respecting this *residence*, as well as the part hyænas are generally supposed to have played in the introduction of the osseous remains. It may be of service to

* See "The Reader," 19th November, 1864.

state here that no instance has occurred of the bones of even an entire limb of an animal—to say nothing of an entire animal—being found in their anatomical position; that the occurrence of the distal end of a tibia, an astragalus, and the proximal end of an os calcis of horse being met with thus inosculated, was so remarkable a fact as to deserve special mention in the Committee's Eighth Report, read at Brighton in 1872;* that bones of very different species are constantly occurring mixed confusedly together in the same "finds;" that the long bones are usually fractured after a manner shown by experiment to be characteristic of modern hyænas; that jaws have usually had their condyles and lower borders eaten off; that scarcely a single bone is met with which is not more or less scored with hyæna's teeth-marks; that, judging from the high ratio which those belonging to the hyæna bear to the total number of teeth of all kinds found in the Cavern, due allowance being made for the comparatively small number of teeth comprised in the hyæna's dental formula, there can be no doubt that this creature was by far the most prevalent amongst the Cave mammals; and that the frequency, the amount, the positions, and the character of their fæcal matter leave no doubt that hyænas were frequent occupants of the Cavern, and probably in considerable numbers. With these facts duly before us, though it may not be necessary to suppose that a solitary bone was never washed into the Cavern, there seems no room to doubt that the hypothesis of the floating in of carcasses is both unnecessary and inadmissible, or that the Cavern became a mausoleum through the agency of hyænas who dragged into their cavern-den, piecemeal, such animals as they found dead in its neighbourhood.

16. *The "confusion" of the Cave-earth*.:—Dr. Dawson speaks, more than once, of the Cave-earth as "a confused and often-disturbed bed," but he mentions no fact in support of this defamation of character. It is quite true that the materials of the bed are destitute of a stratified or symmetrical arrangement, but had this been due to disturbance, it may be concluded that, again and again, some sheltered nook would contain remnants of the stratified arrangement assumed to be characteristic of the primary undisturbed formation. Nothing of the kind, however, has presented itself. Moreover, there are well-known positive facts apparently inconsistent with a confusing and often-disturbing agency: Thus, at all depths in the

* *Report Brit. Assoc.*, 1872, p. 43.

Cave-Earth, stones and bones are to be met with more or less completely invested with thin films of stalagmite, showing that they had lain for a considerable period on what was for the time the surface of the bed, and, whilst thus unburied, had been exposed to the calcareous drip from the roof, and had thus become encrusted. This process was closed by the introduction of an instalment of Cave-Earth, which appears to have been usually of a very limited amount, as the same phenomenon presents itself again and again, at very slight successively higher and higher or lower and lower levels. The objects thus encrusted have the appearance of having held undisturbed possession of the spot in which they were first buried until they were dug out by the workmen. Again, it has been often noted of the faecal matter already mentioned, that its condition indicates that it had neither been moved, nor altered in form, after it was dropped by the animal. In short, a careful study of the Cave-Earth *in situ*, from day to day during upwards of ten years, has impressed me with the belief that it is the rule, far rather than the exception, for the objects to be found in the spots they originally occupied in the Cave-earth.

17. *The Condition of Devonshire men during the era of the Cave-earth*.:—Dr. Dawson almost appalls one by the implied antiquity of man in his “attempt to sketch the series of events which [the Cavern] indicates.” He supposes that, at a time when the land stood so far above its present level, “the Rhine, the Thames, and the Severn, may have alike been tributaries” of the same now nameless river, when “in pursuit of game [man] sometimes ascended the valleys beyond the Cavern, or even penetrated into its outer chambers,” “perhaps there were . . . savage hill-men, inhabiting the forests and warring with the more cultivated denizens of plains below, which are now deep under the waters.” It is something to admit the existence of a British people prior to geographical changes of such a magnitude, but it is much more to suggest that there were perhaps two British races—one savage, and one more cultivated; for if they were descended from the same primary pair of ancestors, these must be vastly older still, for if they were as civilized as their hypothetical descendants on the subsequently submerged Devonshire plain, there must have been time enough between them and their savage descendants of the hills to account for the degeneracy of the latter, as well as their loss of all knowledge or possession of the tools their ancestors

must have used ; whilst if the primal pair were themselves savage, a large amount of time would be required to admit of the cultured condition of the men of the plain. If, however, the two races were from the first utterly distinct, it is scarcely possible to suppose that their advents into the world were at or about the same period, or that they were separated by less than a vast amount of time. It may, however, be suggested that we are getting beyond the region of Science here. The existence of the savages is sufficiently attested by their rude tools, but there is no indication of their more cultured contemporaries, even though it might have been expected that had they ever existed, they would have had a greater number and greater variety of tools of a more elaborate character, and that traces of them would have been met with.

18. *The introduction of the Flint weapons*.—The author, speaking of the "savage hill-men," says "their weapons, lost in hunting, or buried in the flesh of wounded animals which crept to the streams to assuage their thirst, are those found in the Cave-earth." If the hypothesis, already remarked on, of torrents washing into the Cavern carcasses of animals, be admitted, it is easy to see that an animal having a flint weapon buried in its flesh, and dying at a stream to which it had come to drink, might be the means of introducing the tool, which, on the decomposition of the flesh, would sooner or later be buried in the Cave-earth ; but it might have been expected that such tools would occasionally be buried in the skull or other part of the skeleton, and that it, or a broken part of it, would have been found in some of the Cavern bones, which, after having been carefully washed and examined, have been as carefully packed in from 6,000 to 7,000 boxes. Nothing of the kind, however, has hitherto been detected. But waiving this. How did the weapons "lost in hunting" get into the Cavern ? The hunters scarcely pursued their sport in its recesses. Should it be suggested that they too were washed in, it may be replied that the keen edges which many of them retain uninjured, and the unbroken character of almost all of them, notwithstanding their fragility, are facts utterly inconsistent with this mode of introduction. Further, is it right to suppose that all the flint-tools were *weapons* ? Unless the experts have greatly erred, many of them were "scrapers" and "drills," useful in, and intended for, the arts, not of war and the chase, but of peace. Moreover, the presence of the bone tools requires an explanation. Bone awls, and needles, and pins, and the perforated teeth of

badgers, are surely not *weapons*, nor are they likely to be lost in hunting, or buried in the flesh of wounded animals; yet they have been met with in the Cave-earth, and in one instance at the greatest depth to which the excavation has been carried in it. It seems impossible to doubt that the presence of such tools as the Cavern has yielded must be accepted as evidence of the presence of man there during the periods represented by the deposits in which the tools were found; and it may be doubted whether a savage would be as likely to have reared for himself so good a home as the Cavern would have made him—a home offering protection equally from the winter frosts and the summer heats; or whether the acceptance of such a ready-made residence would not, under the circumstances, be a proof of his good sense.

19. *Clay, coating the Black Mould*:—"For a time," says the author, when speaking of his second hypothetical submergence, which he supposes to have occurred near the close of the Cave-earth era, "the cavern may have been wholly submerged, and the charcoal of the extinguished fires became covered with its thin coating of clay." By this "charcoal of the extinguished fires," Dr. Dawson, of course, means the *Black Band*. Though it must be admitted that it was in part "covered with a thin coating of clay," it is equally true that it was *but* in part. The description of it already quoted from the Committee's Third Report shows that this layer was from 3 to 6 inches thick, and that it covered no more than about one-half the area of the Black Band, the remainder being immediately covered by the Upper Stalagmite.

I cannot take leave of Dr. Dawson's notice of our famous Devonshire cavern without calling attention to several gratifying points in it; harmonizing, as they do, with the views of British geologists, who, from personal inspection, are familiar with the facts of Kent's Hole. They are, that the flint "implements" are beyond all question the work of man; that man lived in Devonshire during the era of the Cave-earth, when he was the contemporary of many species of extinct mammals; that the Cavern deposits of mechanical origin were mainly derived from external sources; that great changes have taken place in the physical geography of the district and in the relation of Britain to the Continent within the first human occupancy of Devonshire; and that the *Black Mould*—the uppermost of the Cavern deposits—goes back to times before the Roman invasion.

ON THE DECAY OF LIMESTONE FRAGMENTS IMBEDDED IN THE NEW RED SANDSTONE CLIFFS ON THE COAST OF SOUTH DEVON.

BY E. PARFITT.

(Read at Torrington, July, 1875.)

THE almost non-fossiliferous state of the new red sandstone has led geologists into various speculations as to the condition of things during the Triassic age. Some have attributed this to the saliferous condition, comparing the sea in which these sands were deposited to a state something analogous to the Dead Sea. But whatever the cause may be, it is certainly very remarkable that these sandstones, covering so large an area as they do, should be almost entirely devoid of animal remains, and more especially as the rocks, both above and below them, are full of fossils.

Now the discoveries of the naturalists on board the *Challenger*, as to the various deposits and condition of the sea-bottom at various depths, I think have thrown considerable light on this otherwise vexed question of the new red sand.

In a lecture delivered by Professor Huxley, and afterwards published in the *Contemporary Review* for March last, the Professor, quoting from the *Challenger* report, says: "Crossing from these shallower regions occupied by the ooze into deeper soundings, we find, universally, that the calcareous formation gradually passes into and is finally replaced by an extremely fine pure clay, which occupies, speaking generally, all depths below 2,500 fathoms, and consists almost entirely of a silicate of red oxide of iron and alumina. The transition is very slow, and extends over several hundred fathoms of increasing depth; the shells gradually lose their sharpness of outline and assume a kind of 'rotten' look and a brownish colour, and become more and more mixed with a fine amorphous red-brown powder, which increases steadily in pro-

portion until the lime has almost entirely disappeared. This brown matter is in the finest possible state of subdivision; so fine that when, after sifting it to separate any organisms it might contain, we put it into jars to settle it remained for days in suspension, giving the water very much the appearance and colour of chocolate."

Now it will be observed at once that our new red rocks do not entirely correspond with the deposit that is now being formed in mid-Atlantic Ocean, but there are two features that approximate so closely that they seem almost identical, and I think that, from this point of view, some light may be thrown upon the non-fossiliferous state of the Triassic sea, so that the present may be able to illuminate the past.

No reason, that I am aware of, has been assigned for the accumulation of this Atlantic red mud in one particular belt or band across the sea bottom, something analogous to the belt of new red stretching across our island. First, then, we have this mud highly charged with a red oxide of iron; and, secondly, we see that it is in all probability owing to the presence of this iron that the calcareous shells of molluscs are rapidly dissolved—that they are in a very short time reduced to an amorphous condition, a pulverulent mass; so that, in fact, this Atlantic red mud is non-fossiliferous, and corresponding with our Triassic new red sand, which is also very highly charged with a similar oxide of iron.

The red rocks of our south coast, between Langstone point and Teignmouth, during the widening of the South Devon Railway, when the freshly-cut cliffs afforded a fine section for observation and study, Mr. Andrew and myself observed, about half-way between Smuggler's Lane and Teignmouth, some thin white streaks or lines in about the middle of the cliffs; and the lines are conformable to the lines of deposit, and were embedded in the sand at the time of its deposition. On examination of these lines they are found to be, if wet, a plastic clay; if dry, a pulverulent powder or dust, mixed with fine particles of siliceous or silicious grain. On following up these white lines or bands, we find, as we proceed towards Teignmouth, that they increase in number and in thickness, so that in some places the cliffs are streaked and mottled with them. Proceeding with our examination, we soon discover the cause of these lines; we find thin pieces of limestone in various stages of decay: those pieces that were when deposited about an inch or less thick have entirely decayed, and been reduced, as before stated, to a plastic clay or dryish powder, as the case may be. These

pieces of limestone nearly all lay quite flat, and even in the sandstone strata, showing, I think, that they were deposited in tranquil waters; and surrounding each of these pieces of limestone was from half an inch to an inch of this white clay or powder. In a piece that gave a very good example of this decay it measured, when entire, three inches thick, one inch now remained solid limestone, but an inch of the upper side had been reduced to powder, and the same had taken place on the under side; we examined a great number of others and found the same process of decay going on, and all apparently in about the same stage. Fragments of an inch or less had been reduced to white clay; if thicker than an inch, or a little more, they are not entirely reduced, so that the process of decay appears to be slow but certain. Here, then, we have a solution of at least some of these white clayey patches in our red sandstone cliffs. If the face of the cliffs had been exposed to storms of rain and wind, the clay or powder surrounding these fragments of limestone gets washed or blown out, and although the limestone might remain in its hole, it would give no clue as to what had been going on around it. Mr. Godwin-Austin remarks ("Geology of South Devon"), *Trans. Geol. Society*, vol. vi., 2nd Series, p. 455: "That wherever limestone blocks and pebbles occur (as about Teignmouth), the materials which surround them are not coloured." This is true, as the clay remains of the limestone still remain white, it seems to repel the colouring matter, at the same time the erosive nature is active.

Now, comparing the erosive nature of the new red sandstone, as here exemplified, with what has been discovered going on at the bottom of the sea in mud highly charged with a red oxide of iron—and the red rocks here are highly charged with the same metallic oxide—I think we have strong presumptive evidence that the two things are coincident; and the one at the sea bottom will, when taken as evidence in conjunction with the erosive nature of the iron oxide (for which I presume it is) that has eaten away the limestone, explain the reason why, if calcareous organic remains were ever deposited in these new red rocks, that we do not find them now.

Sir Charles Lyell, in *Elements of Geology*, edit. 1865, p. 445, observes: "It is a general fact, and one not yet accounted for, that scarcely any fossil remains are preserved in stratified rocks in which this oxide of iron abounds; and when we find fossils in the new or old red sandstones in England, it is in the grey and usually calcareous beds that they occur."

I think we may say, without presuming too much, that *some* light is now thrown upon this long and perplexing problem.

Before closing this part of my subject, let me remark on the peculiarity of these fragments of limestone of which we have been speaking. They are as a rule flat angular pieces; that is to say, they are broad and flat, the edges of which are broken in an irregular manner, so as to form sharp angles. The peculiarity is the flat or laminated form of each piece; for, so far as I know, our carboniferous and Devonian limestones, are *not* laminated, but massive. I am speaking here of those fragments which are found between Smuggler's Lane and Teignmouth. They are there fewer in number, and, I think, of a totally different character from those belonging to the older portion of the new red; that is, from the Shaldon side of the Teign on towards Marychurch and Torquay. My impression is—but I would not insist upon this—that the new red sandstone of our southern coast might be divided into sections, and that these sections are tolerably well marked by the materials imbedded in them. The great question is, From whence come these materials? They have not travelled far, neither have they been subjected to much or any attrition, as their edges and angles are nearly as sharp as when torn from their native rocks. What then was the agent that severed them from their parent rocks? Was it ice that split these rocks asunder? and were the fragments carried into this apparently tranquil sea, and deposited, as we now see them, in the regular stratigraphical deposits of this new red sand?

THE CISTERCIAN HOUSES OF DEVON.

INTRODUCTORY.—I. BUCKLAND.

BY J. BROOKING BOWE, F.S.A., F.L.S.

(Read at Torrington, July, 1875.)

1. WE have in this county (for although Thornecombe was in 1842 made a part of Dorsetshire, I include Ford Abbey as belonging to Devon) examples both of the earliest and latest foundations of the Cistercian order of monks.

Always excepting the most valuable work of the late Dr. Oliver, little attention has been hitherto paid to the monastic institutions and ruins of the county. Perhaps this neglect has arisen from the unfortunate state of decay into which nearly all the buildings have fallen. Devonshire seems to have suffered more than any other part of England, and cannot be said to possess any monastic ruin of importance, and there is none perhaps except Dartington and Ford, in which the existing remains give any idea of its former architectural glories. And yet Devonshire possessed upwards of thirty religious houses, some of the first importance, and ranking among the noblest in England. The bare mention of the great Benedictine monasteries of Exeter and Tavistock, the Cluniac house at Barnstaple, the five abbeys of the Cistercians distributed over the county, and last, but by no means least, the Augustinian Priory of Plympton, to say nothing of the numerous smaller establishments of the preaching orders and friars, will show how much of interest there is in the investigation of the subject.

2. Unfortunately, the task is not easy; and to work out properly the history of even one of these, requires an amount of time which few are able, and still fewer willing, to devote. But even by a person whose time is much occupied, and with whom the labour is one of love, a something can be accomplished; and I think that a concise history of each house,

embracing all the known facts of interest connected with it, such as I am about to endeavour to give, will be of some little use. I propose to give a short history of each of the Cistercian abbeys from its foundation to its fall, to refer briefly to the various abbots, to enumerate the possessions of the monks, and their holders after the dissolution, and to describe from personal examination such of the buildings as remain. And without giving in every particular my authorities, I may say that I have consulted every author who has touched upon the subject, from the ponderous folios of Oliver and Dugdale and Polwhele, and the less unwieldy quartos of Pole, Prince, and Lysons, down to the more concise but not-to-be despised pages of the traveller's hand-book and the local guide, and even to the magazine article and the newspaper paragraph.

3. But before proceeding to the special subject of each abbey, it will be convenient to consider briefly, by way of introduction, the history of the order, the objects its members had in view in its formation, and their rule of life, and also to refer to the buildings, and to show how they were especially constructed to meet the wants of the community.

4. As is well known to those who have looked into the history of the monastic orders, the Cistercian sprang in the eleventh century from the Benedictine order, and had its rise in an attempt to abridge the luxury and put an end to the worldly spirit which then pervaded monastic life.

5. In 1098 a few monks of the Abbey of Molesme, in the diocese of Langres, took counsel, and resolved to endeavour to stem the tide, and leaving their own monastery, wandered forth under the leadership of their abbot Robert, and settled down in a desert spot about fifteen miles south of Dijon, and on St. Benedict's day laid the foundation of that famous order which in its day and generation exercised such an important influence throughout Europe, which sent forth so many men distinguished for their piety and their learning, which gave to the church many a pope and bishop, which in less than a century possessed nearly two thousand monasteries, each and for many a year the centre of a life of self-denial, piety, frugality, and industry, each spreading around it an atmosphere of well-directed labour, each exercising an influence felt, at least in England, perhaps even to the present day.

6. Although Alberic and Stephen Harding (the latter an Englishman, and one of the West Country, a native of Sherborne), who succeeded Robert in the government of the newly-established order, did much in laying down the lines

which were to be the rules for future guidance, neither were very successful in inducing others to follow their example in living a life of such austerity as they proposed. But Harding was comforted by the vision vouchsafed to him of a great multitude washing their white robes in a fountain, which he took to be an assurance that his labours would one day be rewarded. It was not until the great St. Bernard, who in 1113 with thirty companions had knocked at the gate and obtained admission to Cîteaux, had joined the monks, that the order, in spite of the criticisms, the scoffs, and the jealousies of its brethren, began to grow in popular favour. From that time the vision of Stephen Harding began to be fulfilled, and soon the poor buildings of Cistercium were too small to accommodate those who applied for leave to enrol themselves among the ranks of the new brotherhood.

7. Before the Reformation it is estimated that the order possessed about 3500 houses, 109 of which were in England. The first founded in this country was that of Waverley, in Surrey, in 1129; and one of the earliest was that of Buckfastleigh, in this county.

8. What were the objects which these men set before them? What was it that gave them such a reputation? What was it that made men exclaim that the whole church was full of their high reputation and opinion of their sanctity as it were with the odour of some divine balsam, and there is no country or province wherein this vine loaded with blessings has not spread its branches? * An endeavour to answer these questions would be out of place here, as it would necessitate an investigation, not only into the causes which moved the founders of the order to separate themselves from their former associates in the religious life, but also to consider the history of the time, and the social and political state of the people in the twelfth and thirteenth centuries. Briefly, however, it would seem that the secret was in the unquestionable sincerity and honesty of purpose which characterized the order in its early days, in the self-sacrifice shown, and the labours to which the monks gave themselves up; in their appealing by their simple mode of life to the feelings of the lower classes, and in their avoidance of the ease and luxury which even then was too frequently a scandal and a blot on the religious life.

9. In the eleventh, twelfth, and thirteenth centuries, the lot of the Cistercian monk was a hard one. The rules drawn up by Harding in his *Carta caritatis*, the Charter of Love, were

* Cardinal de Vitry. Fox, p. 293.

strictly enforced, and it must have required no small confidence in his powers of endurance when the novice took the vows binding him for life to the austerities of the order. The monasteries were situated in such secluded spots as to render any intercourse with the outside world difficult. The food of the inmates was of the plainest kind, silence was rigidly enforced, communication was carried on within the walls mainly by signs, the frater or day-room had no fireplace, and was exposed to the rigour of the weather, one end being left open to the air; and when the poor monk, after perching his supper of fruit and herbs, sought his dormitory, the cold night air played about his hard couch, admitted by the slits in the long wall, unglazed and unshuttered, which served as windows. The stranger or wayfarer was welcomed and hospitably treated, but he was not allowed to enter the refectory or cloister. Luxury, ease, and the ordinary comforts of life were frowned upon, and for a long time banished. Labour and prayer, prayer and labour, alone occupied the thoughts of the Cistercian.

10. They were the farmers proper of the monastic orders. While other communities had their mills and granges mainly for their own use, and the use of those about them, the Cistercian made agriculture his business, and sent the products of his land forth for the use of the outer world. It is somewhat difficult to realize the scale on which farming was conducted on the estates of a great Cistercian abbey. I think our Devonshire houses were small in comparison with those in other parts of the country; but when we recollect that a Continental one had soon after its foundation 10,000 sheep, 1,000 goats, 2,000 pigs, 500 cows, 200 mares, and 100 horses, we can easily understand that extensive buildings were required, and a large staff necessary for the conduct of such a business. How then was the labour accomplished? Not by the monks; for they were few in number.

11. In every Cistercian house were two classes—the monks proper and the conversi, the masters and the servants. Both classes took the vows; but the lives of the conversi were spent mainly in labour upon the farms and other menial work, performing such religious duties only as might be reasonably expected from lay folk, who had to obtain their livelihood by the sweat of their brow. They were the poorest of the poor, and often the vilest; and many sought the convent when no other door was open to them, and death stared them in the face. Taken in hand then by the monks, compelled to earn their bread, they soon became useful, and the outcast of

society found in the Church a shelter denied him by the world. The number of monks proper was comparatively small; the conversi were numerous. At Clairvaux it seems that preparation was made for about 350; and at Fountains Mr. Sharpe calculated that 200 could be accommodated. Where were such numbers housed? Mr. Sharpe answers this question very satisfactorily, and to his recently-published books on the subject of Cistercian architecture I must refer all interested in the general subject. I will, however, briefly indicate the ordinary features of the arrangements of the buildings.

12. In the first place, the church was to be provided. This, according to the rules, was always to be in the form of a cross, and dedicated to the Blessed Virgin. The choir, or more properly chancel, was of small dimensions; no Lady chapel; but chapels are frequently found in the transepts. The tower was low. There were to be no representations of the human figure. Stained glass was forbidden; pictures and organs were not allowed; but as time crept on these rules were neglected, and the Cistercian church in its architecture became less severe. It would seem that the rule was, that the church should be on the north, and the other buildings on the south; but we shall find that there were exceptions to this. Supposing ourselves leaving the church on the south side through the transept, we should have on the east the chapter-house, and on the west the east walk of the cloister, and beyond the frater or day-room of the monks, over which would be their scriptorium and dormitory, connected by a flight of steps with the church. Turning to the west, we should enter the south walk of the cloister, and have on our left hand successively the kitchen, refectory, and offices, and following the same walk, leaving the western arcade on our right, we should enter that part of the building, the special home of the servants of the monastery, to which Mr. Sharpe has happily given the name of the *Domus Conversorum*. In the greater monasteries this was sometimes 300 feet long. Those who know Fountains will doubtless recollect the noble vaulted building which is foolishly called the cloister, measuring about this length. This is the *Domus Conversorum*, and over it was the dormitory of the conversi.

13. You will see from Mr. Sharpe's model plan, given in the first part of his work, that access was thus easily gained to the church by all. It was divided, probably by means of wooden partitions, for the use of, firstly, the monks, who took the east end; secondly, the conversi, who used the

aisles and the last bays of the nave; thirdly, the outsiders, the inhabitants of the adjoining villages and others, to whom was allotted the centre of the nave.

14. Hills and highlands were always avoided in the selection of a site for an abbey. The Cistercian's habitation was far from the haunts of men; in a valley, and as far as possible in the narrowest part of it, and close to a river, the settlement was made; and in such a situation in many a fertile spot throughout England the farmer-monk made his home. In five of such localities in our fair county, members of the order, at varying intervals, took up their abode. The earliest house was founded in 1137, only nine years after the first—that of Waverley, in Surrey—was planted in England; and the remaining four were established at different times—one in the twelfth, and the other three in the thirteenth century. While we can boast one of the first, we can also claim one of the latest in England. The one I am now about to speak of is the last founded.

15. The Abbey of Buckland was founded by Amicia, the mother of Isabella, wife of William de Fortze, Earl of Albemarle, a lady connected with both those great families which had shown such love for the Cistercian, which had done so much to extend his order, and which had endowed it with so many rich possessions. Baldwin Earl of Devon had founded Quarr, in the Isle of Wight; and William le Gros, Earl of Albemarle, had founded the Abbeys of Meaux and Vallis Dei, both for the Cistercians, besides houses for other orders; and we may conjecture that it was the consideration of what had been done by her ancestors and the ancestors of her son-in-law, and the good results which were apparent from their benefactions, which induced Amicia, the widowed countess of Baldwin, seventh Earl of Devon, to provide another place of settlement for Cistercian brethren.

16. The monks having already houses in other parts of the county, and the south-west being unprovided, none being nearer than Buckfastleigh, Amicia resolved that her new colony should be planted amidst the family possessions on the banks of the Tavy. She therefore acquired, either by purchase or gift from her daughter Isabella, certain lands which were vested in her by deed, dated 1273, the King's confirmation of which is dated 1275; and in the eighth year of Edward I. (1280) she signed the foundation deed of Buckland Abbey, vesting in the monks and their successors the manors of Buckland, Bickleigh, and Walkhampton, with the advowsons thereof, and the hundred of Roborough, for

the use of the abbey dedicated in honour of God and the blessed Mary, mother of God, and the blessed Benedict. From 1273 to 1280 the pious Amicia was, we may conclude, busily preparing the site and buildings for the reception of the monks and their servants.

17. The foundress did not go to Ford, as might have been expected, for men to fill the new house, but she asked the Abbot of Quarr, the house founded, as I have mentioned, by the restless Baldwin, the second earl, to send her some monks, and accordingly Robert the first abbot* and others were sent from the Isle of Wight to Buckland. As frequently happened, there was trouble to begin with. It was one of the rules of the order that there should be no interference with the parish priest, and that the houses should be under the jurisdiction of the bishop. But when the monks came to Buckland they seem to have broken both these rules; they began to celebrate divine offices without any consent or license of the bishop. The bishop of the diocese, the famous Walter Bronescombe, was not a prelate to view with indifference any encroachment upon the privileges of his see, or to permit any interference with, or contempt of, the spiritual jurisdiction rightly belonging to him, and when he heard that the newly-arrived monks had begun to exercise spiritual functions in the neighbourhood of their house, he quickly placed them under an interdict. We do not know the date of this, but, as we have seen, there were buildings used by or for the use of the monks before the charter of Amicia. The interdict is referred to in a deed of Bronescombe's, dated 27th May, 1280, in which he recites, that having been petitioned by the Queen Eleanor (who had doubtless been urged to take up the cause of the monks by Amicia), he thereby removed the interdict, and permitted them to celebrate divine service until the feast of Pentecost next following. In June, satisfied with the conduct of the new-comers, the bishop extended the time to Michaelmas; but on the following St. Mary Magdalene's-day (the day of his death, 22nd July, 1280) Bronescombe released the monks from all further supervision, and gave them permission to perform all divine offices for ever thereafter.

18. As I said just now, the Foundation charter vesting the land in the abbey is dated 8th Edward I. It is interesting to notice how careful grantees of land in those days were to have their rights confirmed by all persons in whom there could be possibly any claim, or right of claim, therein. We con-

* Foundation Deed, Appendix C.

stantly find deed after deed professing to quit claim to land which we might have thought was effectually vested in the holder. Here, besides the deed of foundation from Amicia and the grant from her daughter, the wealthy and powerful Isabella de Fortibus, it was thought necessary also to obtain confirmation of the latter from the King, of whom the lands were to be held in *capite*. And later, in 1291, when it would appear that the Countess Amicia, "*nobilis mulier mater nostra carissima domina Amicia*," was dead, another confirmation was obtained from her daughter.* The deeds are very interesting, containing the names of places very familiar to us. The neighbourhood does not seem so utterly desolate and uncared-for as might have been supposed. We find mention of stone walls, boundaries, roads, paths, and houses. Soon after the foundation the title of the abbey to the hundred of Roborough was called in question, and the abbot was cited in the king's courts to show his authority in opposition to that of the crown; and although he produced the charters and confirmation by the king, as the hundred was not mentioned in the latter, judgment was given for the crown. But this difficulty must have been got rid of; for the abbey held the hundred down to the dissolution.

19. From the registers of the bishops of Exeter, so diligently searched by Dr. Oliver for the purposes of his *Monasticon*, from a few old deeds, and from leases granted by the various abbots, we gather some scanty knowledge of the history of the abbey. No Cartulary, or any other important record of the abbey, is to be found in any public office or library, or, as far as I can ascertain, in any private one.

20. In 1336 (11 Edward III.), not 1328, as stated by Dr. Oliver, the royal license was granted to the abbey and convent to crenellate the abbey. *Mansum abbatiz sue, Abbas et conventus de Buckelond*. Perhaps the fear of the foreigner had something to do with this fortification. It was not long after this (1339), that the French landed and burnt a great part of Plymouth; and William, the then abbot, might have thought that the herds and well-stored barns of the monks would prove a source of temptation to the roving Breton, and needed protection, and the abbey was battlemented.†

* Appendix E.

† "Very few houses of any importance were built in the thirteenth, fourteenth, and fifteenth centuries without being fortified; and the law required a licence from the crown before any house was allowed to be fortified."—Parker. The following is an extract from a licence to fortify (1482) given

21. The monks appear to have lived a quiet, unostentatious life—not greedy of wealth, or desirous of adding to their possessions, not quarrelling with their neighbours, as monks often did, and as landowners sometimes do even in our more enlightened times, but still occasionally involved in disputes with reference to their rights. Indeed, almost the first mention we have of the doings of the monks is to be found in the record of legal proceedings taken against them by a servant of the Abbot of Tavistock—his forester, one Thomas Gyreband—who complained, that having charge of the wood of Blakemoresham, and coming to a place in it called Ivyoak, he found Robert the Abbot of Buckland and others felling the wood and oaks there, and that on his attempting to prevent this, the abbot and the others with darts and hatchets assaulted and beat him, and with a bow and an arrow made of ash, headed with iron and steel, wounded him in the right arm, and afterward stole from him an outer garment. The Abbot and Convent of Buckland pleaded firstly their clergy, and denied the assault and robbery. Thomas got the worst of the affair; for he contradicted himself, and the abbot and his monks were acquitted, and Thomas committed to gaol for making a false accusation. And later in the pleadings we find the whole history of the affair. Blackmoresham wood was, I expect, on the opposite side of the Tavy, and belonged, as the forester said, to the Abbey of Tavistock, but the Cistercians had on the river a weir, and were obliged to keep it in order, and had a right to take from this place wood for its repair. Whilst obtaining wood, Thomas assaulted the defendants, and drew blood, and

by Mr. J. H. Parker: “Edward by the grace of God King of England & France and Lord of Ireland, to all to whom these presents shall come, greeting. Know ye that we considering the good & gracious services which our dearly beloved subject Edmund Bedingfeld Esq^r, hath before these times rendered to us from day to day, and which he still continues inclined to render: of our special favours have granted and given *licences* and by these presents do grant and give license, for us and our heirs, as far as in us lyeth, to the said Edmund, that he at his will and pleasure, build, make, and construct, with stone, lime & sand, *towers* and *walls* in and about his manour of Oxburgh in the County of Norfolk, and that manour with such towers and walls to inclose, and those towers and walls to *embattle*, *kernel* and *machicollate*: and that manour so inclosed, and those walls and towers aforesaid so embattled, kernell’d, and machicollated, built and constructed, to hold for himself and his heirs for ever, without perturbation, impeachment, molestation, impediment, or hindrance from us or our heirs or others whomsoever. And besides, of our abundant grace, we pardon, remit, and release to the aforesaid Edmund, all transgressions, offences, misprisions, and contempts, by him the said Edmund before these times, however done or perpetrated, on account of his enclosing such walls and towers, embattled, kernelled, machicollated, and built as aforesaid, in and upon his said manour,” &c. &c.

in self-defence one of the Buckland men shot Thomas with an arrow in the arm, whereupon he fled, leaving his coat, bow, and hatchet, which William le Pye and another carried away, not as a robbery, but because they were left there. And the jury found that the defendants were rightly in the wood and not trespassers, and they were acquitted.*

22. In 1448 the monks considered themselves aggrieved for that the Lord of the Manor of Stonehouse, James Derneford, had, in defiance of the rights of the abbot and monks as lords of the hundred of Roborough, set up at Stonehouse a pillory and tumbrel, and had held a court of frank-pledge there. This was a usurpation, and gave rise to much trouble and unpleasantness. The monks would not allow James Derneford to use these marks of authority, and he would not admit that he was wrong, or remove them. At last, as recited in the award, the whole matter was referred, by the mediation of friends, to the decision of William Hylle, the Prior of Plympton, and James Chudlegh, Esq. The award was in favour of the abbey; and besides removing the pillory and tumbrel, James Derneford had to pay £20, as a fine for his encroachment.†

23. Thirty years later we find the monks defendants in a case, which was apparently brought against them, on behalf of the Crown, for the purpose of ascertaining the rights of the Duchy of Cornwall in the Forest of the Dartmoor.‡ The Abbot, Thomas Oliver, was cited to appear at Lydford, for that he did on the fourth day of October (18 Edward IV.), 1478, intrude and make claim upon land in Dartmoor within the bounds and marks of the forest, and was found culpable; and the jury also found that all the lands within the precincts, marks, and bounds of Dartmoor were of the ancient demesnes of the said prince, and were called the Fenfield and Common of Devonshire; and that all waives, strays, escheats, and presentments of assaults and bloodshed, plaints, writs of right according to the custom of the manor of Lydford and assizes of land, were appropriate to the court of Lydford. As doth appear, says Westcote, by ancient record remaining in the castle of Lydford.§

24. The agreement in the muniment-room at Powderham, which has been quoted by Oliver,|| proves how much the later Cistercians had departed from the strictness of the early

* Oliver, p. 385.

† See Appendix F.

‡ The forest of Dartmoor was permanently attached to the Duchy of Cornwall in 1337.

§ Westcote's *Devon*, p. 85.

|| Oliver's *Monasticon*, p. 381.

rules of their order. It is dated 28th May, 1522, and is made between Abbot Whyte and Robert Derkeham, and shows how Robert, in return for assisting daily in the choir and teaching four boys of the convent, and also teaching the boys and any monks who might wish to learn music and the organ, was to be paid an annuity of £2 13s. 4d., to be provided with a decent table, to have a furnished room over the west gate of the monastery, and a gown of the value of 12s. every year; to have the reversion of a tenement at Milton, and until it fell in, feeding for two cows, and a garden, he paying half the rent. One would have thought that this was very fair pay as times went for Robert's work; but his room over the west gate was cold and dreary in the winter, so he had also five ounces of bread, a quart of beer, and a wax candle every night throughout the year, and thirty horse-loads of faggots. With these and his books and organ he ought to have made himself tolerably comfortable. He apparently appreciated them, and continued in their enjoyment for some time, for he was alive at the dissolution, and the grant was allowed by the Augmentation Office, 18th December, 1540.

25. The list of the abbots is incomplete; the following account contains all that I can glean with reference to them.

The names of the first and second abbots are somewhat uncertain; from Robert being mentioned in the Foundation charter, and as the abbot complained of in the proceedings by the forester Thomas Gyreband, it may be concluded that he was the first abbot, and, if so, it may be taken for granted that the second was William, who is mentioned in a grant, 17 Edward I., 1288, by Margaret de Ripariis, the widow of Baldwin, fifth of that name and eighth Earl of Devon, the only son of Amicia, the foundress, by which deed she released to William the Abbot of Bocland and his convent her claim of dower in the churches of Bocland and Walkhampton, in consideration of an annuity of £8 paid to her clerk William de Brenton, for which in default of due payment the sheriff was to levy by writ of *fieri facias* on the goods of the abbey.* Bishops Quivell and Bitton confirmed the grant of Buckland Church to the Abbey.

Galfridus was the next abbot. During the time of his rule there were many disputes as to the injury done to the property of the Abbey by the working of the silver mines in the neighbourhood. The complaints of the monks and the proceedings thereupon are to be found in the *Rolls of*

* *Archæol. Journal*, vol. v. p. 58.

*Parliament.** Thomas Bitton, the Bishop of Exeter, in an instrument dated 1305, appropriated the church of Walkhampton to the use of the monks who were its patrons, and it recites the enormous devastation done to the woods and lands of the abbey by the working of the silver mines by the crown in and around them. The late Sir E. Smirke supposed these to be the silver mines of Beer, which were about this time worked with success, but as I do not find that the abbey ever had any property on the western side of the Tavy, it is rather difficult to see how their lands could be injured, and I think there may be some mistake in the identification.

Thomas was abbot as early as 1311, and in 1316 we find that he and the prior of Plympton entered into an arrangement (upon the intervention of the Bishop, Walter Stapeldon, with reference to suit and service of the latter at the hundred court of Roborough in respect of the lands of the priory in Old Blakeston, which was situate within the hundred, and it was agreed that the attendance should thenceforth be limited to three courts a year instead of, as I suppose, four, as theretofore.

The fifth abbot was a second William; he was party to an agreement with Ralph de Bellworthy, also with reference to suit and service at the hundred court of Roborough. He was succeeded by Thomas Wappelegh, John Bryton, and Walter, successively abbots in 1356, 1385, and 1392.

In 1418-19 we find, from a lease granted to William Pomeroy and his wife and daughter at Buttyckyswordy, in the manor of Walkhampton, for 65 years, that John was prior. In May, 1442, William Rolff, who had the protracted litigation with James Derneford, of Stonehouse, succeeded. Of the abbots following him we know little. John Spore succeeded Rolff, 28th September, 1449, and John Hylle, October 21st, 1454. Thomas Olyver became abbot 20th March, 1463, and it was against him that the proceedings at Lydford were taken for the monks' trespass upon Dartmoor forest, and during the long time that he was head of the monastery, we find him granting many leases of land for terms of years determinable on lives. He espoused the cause of the Earl of Richmond, afterwards Henry VII., and was proscribed by Richard, but lived to see the success of the former, and continued abbot of Buckland for several years after his accession. John Brundon, the next, was abbot for a short time only. Thomas Whyte succeeded, and was abbot before 1511 and after 1527. It was with him that Robert

* *Rot. Parliam*; see also Oliver's *Monasticon*, p. 385.

Derkeham, the organist, entered into the agreement I have referred to.

The sixteenth and last abbot was John Toker, or Tucker, a member of a Devonshire family and brother to Robert Tucker, alderman, and afterwards, in 1543, Mayor of Exeter, who, Prince says, in his memoir of his grandson William Tucker, Dean of Lichfield, "with great honour discharged the office."* The family was settled at Moretonhampstead. The later pedigree will be found in the *Visitation* of 1620. He was blessed by the bishop as abbot of Buckland, 7th June, 1528, and just ten years afterwards he surrendered the house and its belongings to the king. During the twelve months, immediately before the surrender, he had granted leases (no doubt for a consideration) of the rectorial tithes of the parish church of Buckland, and of Walkhampton, Bickleigh, and Sheepstor, and also of Bampton, to his brother Robert and his nephews William and Hugh Tucker.

26. At the dissolution there were twelve monks in the house, to all of whom pensions were granted. No complaint was made as to their conduct; no breath of scandal or word of reproach rested on this or any of the Cistercian houses; or indeed, as far as I know, and judging from the pension lists, on any of the religious houses in the west country. Thus, after only about two centuries and a half, the land dedicated to God, and set apart for pious uses by Amicia, was snatched from its holders, who had so well discharged the trust committed to them, by a tyrannical king and his rapacious courtiers, aided by a compliant and time-serving parliament. With miserable pittances the monks were sent forth into a world to which they were unaccustomed, while the buildings which had been handed down to them, some of which they had erected, and the lands they and their predecessors had tilled and improved, were given to those who had no love for the monk, who had thus toiled for the stranger who now entered into his labours; while, worst of all, the church was gutted and ruthlessly converted into a dwelling-place for the usurper. Whatever opinions may be held as to the expediency of the existence of monasteries, it is impossible to look impartially into the history of their dissolution without coming to the conclusion that a grievous wrong was done to the people of England, and an injury inflicted upon the commonwealth, from which perhaps it has not yet recovered. This is not the place to enter upon a defence, and I do not now wish to attempt to extenuate, or to say anything upon the religious

* Prince's *Worthies*, ed. 1810, p. 735.

bearings of the subject, but the fact remains, that while before the dissolution these houses were sources of immense good, mingled perhaps with some things that were undesirable, on their extinction, their belongings were squandered, and no effort made to use them for the benefit of the people who had so largely profited by them in former days. It is very evident that in such an establishment as that of Buckland, where there was no grasping after an accumulation of wealth, no endeavour to extend the possessions of the house, that the labours of these monks must have been productive of great good to the locality, and its loss severely felt by the lower and middle classes of the neighbourhood.

27. The revenues of the abbey were at this time £241 17s. 9½d. per annum, and it was easy to pay out of them, or out of the proceeds arising from the sale of the plunder, the pensions granted to Tucker, the last abbot, and his monks. The abbot had £60 per annum; and the monks various sums, beginning with Thomas Maynard, who received £5 6s. 8d., down to John Jordan, who had only £3 6s. 8d. a year.

28. What then were the possessions of the abbey at the time of the dissolution? I have said that the monks were not avaricious. From the foundation charter, and the grants and confirmations, we know that it was originally endowed with the manors of Buckland, Bickleigh, Walkhampton, and Collumpton, and the hundred of Roborough, with the advowsons of Buckland, Bickleigh, and Walkhampton, and much later, in exchange for a part of the hundred of Roborough, given up to the Corporation of Plymouth in 1464, the church of Bampton. We find from the *Valor Ecclesiasticus* that at the end of the two hundred and sixty years of its existence the abbey possessed very little more than is mentioned in the original grants, the additions consisting only of a house in Exeter, doubtless for the use of the abbots on their visits to the bishop, worth £1 6s. 8d. per annum, and a teneement in Saltash worth 8s. per annum. How these were obtained we do not know.

29. Before going further, I may refer very briefly to the seals of the abbey. One, apparently the earliest, is from an impression attached to a deed dated 1310, in which we see in the centre, under a canopy, the Blessed Virgin and Child, and below is a shield with what appears to be a lion rampant, probably representing the arms of the Redvers, Earls of Devon. Between the shield and the canopy the word "Amicia" appears. There is around the margin the legend "SIGILLVM ECCLESIE LOCI S'CI BENEDICTI DE BOCLAN."

Another, of about the same date, is said to be a counter or private seal of the abbot; but I am inclined to think that it does not belong to Buckland, at least I can find no abbot who was named Stephen, which word appears in the legend. The seal is from an impression in the British Museum.

Another, mentioned by Dr. Oliver, very similar to the last mentioned, has a figure of St. Benedict holding the crozier or pastoral staff in his right hand, and a book in his left. In the centre, between the figure, is the name *Ami-cia* divided. The legend is "✠ S. ABBATIE BOCLAND SANCTI BENEDICTI."

A fourth has a right hand grasping a pastoral staff, from which is suspended an olive-branch. The staff passes through the letter A. The legend is "✠ S. COMMUNE ABBIS ET COVENT' S'CI BENEDICTI." This last seal is very similar to that used by St. Bernard himself soon after the establishment of Clairvaux in 1115,* and probably this device was used by many houses.

The arms borne by the abbey were, quarterly, argent and gules, a crozier, in bend or.

28. After the monks came George Pollard, of London, for whom the former were ousted from their valley home. The lands, church, conventual and domestic buildings, were then intact, and were granted to him the year after the surrender, 14th December, 1539, for a term of 21 years, at a rent of £23 3s. 5d., reserving to the king and his successors all great timbers, as well as all trees and wood in and upon the premises being or growing.

29. From the next document it would seem (although it is not so recited) that George Pollard must have disposed of his interest under the royal lease, for we find that May 26th, 1541, the king granted, in consideration of the good, true, and faithful service which his well-beloved servant, Richard Greynfeld (or, as we are accustomed to call him, Grenville), of Bideford, knight, heretofore done to us, as for the sum of £233 3s. 4d. paid by the said Richard Greynfeld, the reversion of the site of the monastery, houses, buildings, barns, tenements, meadows, pastures, feedings, and also all the church, belfry, and burial ground, and all houses, buildings, barns, dove-houses, orchards, gardens, pools, vivaries, land and soil, as well within as close and near to the site, sept, circuit, and precinct of the late monastery, as fully and wholly, and in as ample manner and form, as the last abbot and late convent held or enjoyed the same, paying £2 6s. 4½d. yearly. And thus a descendant of the Sir Richard Grenville, who in his

* See *Archæol. Journal*, vol. xiv. p. 16.

devotion in 1134 had founded and erected the Cistercian monastery of Neath, in Glamorganshire, became a participator in the spoil of another house of the same order.

30. I may mention here that it is said that the bells in the tower of the abbey were given to the church of Egg Buckland. I do not know how this could happen, as there was no connection between the abbey and this church. In the tower at Egg Buckland there are at present three bells, one an ancient one, with the inscription, “✠ *Ecce mea vñs Depello cuncta uerba;*” but this might have come from any place. The two others are dated respectively 1682 and 1768, but may have been recast from older bells, as there were three bells at Egg Buckland in 1553 mentioned in the inventory of church goods of Edward VI.*

31. The Grenvilles did not long continue the owners of Buckland Abbey. In 1580 the abbey site, house and lands, were sold by Sir Richard and Lady Mary Grenville, after obtaining the royal license to alienate them, in December, 1580, to John Hele and Christopher Harris for £3,400; and nine months later these conveyed the property to Sir Francis Drake, whose descendants still retain them.†

32. The manor and lands of Collumpton were sold to Sir George St. Leger, whose son sold them to Thomas Risdon, by whom they were divided up and disposed of to tenants and others. The manor went to the Hillersdens, and from them to the Sweets.

33. Bickleigh and Walkhampton, and the lands of Hele and Rynmore, and those in Shaugh and Sheepstor, were purchased by John Slanning, September 24th, 1546, through whose descendants, by the marriage of daughters, they passed to the Heywoods, and from them, by purchase, to Sir Manasseh Massey Lopes, and are now held by his grandson Sir Massey Lopes.

34. The manor of Buckland, with the advowson of the church, was sold, 12th April, 1546, to a London haberdasher, Richard Crymes and his wife, for £1,451. Their descendants continued in the neighbourhood for some time, and intermarried with the Coplestones, Prideauxes, Drakes, Glanvilles, and other Devonshire families. About 1620, on, I suppose, the death of William Crymes, large portions of the property were sold, long leases being granted; but the manor was retained for some years later. In 1660, however, this was also disposed of to the Slannings, and from them, on the

* *Exch. Queen's Rem.*, T. G. 6211 N. 7.

† Appendix I. *Drake pedigree*.

marriage of daughters, it descended to the Heywoods in the same way as the Bickleigh and Walkhampton properties, and like them is now held by Sir Massey Lopes. The patronage of the vicarage was held by the Crymes family until a comparatively late period. It now belongs to the Hayne family.

35. Where the houses in Saltash and Exeter were situated I cannot ascertain, nor how or to whom they were disposed of.

36. In conclusion I have to describe the remains of the Abbey buildings as they now exist, but I must first observe that I cannot vouch for the absolute correctness of every statement I may make, inasmuch as the alterations, removals, and additions have been so extensive as to prevent absolute certainty of identification. Although I suspect that Sir Richard Grenville destroyed the greater part of the buildings, reserving only such as were useful for the purposes of his new house, yet much was left, portions of which appear to have been removed in recent years.

37. The earliest drawing that I can find,—although it is very rough, is interesting and suggestive, and to some extent valuable,—is in the ancient map of the Forest of Dartmoor, brought under the notice of our society at the last Exeter meeting by Mr. C. Spence Bate. In that map the Abbey Church of Buckland is represented much as we should have expected to find it—a long church with choir, nave, and central tower. It is always pleasant to overthrow the theory of another, and I am able to do so with respect to Mr. Bate's theory, that the map is of the date 1240 or thereabout. But at this time the Abbey Church could not have been there, for the Abbey was not founded or thought of for nearly forty years after. I think that the map is two centuries later than the date Mr. Bate assigns to it. You will notice the long cruciform building with low central tower,* no aisles, and south transept. The chancel longer than the nave is, I believe, the draughtsman's error, for the choir was always short, and there was no lady chapel, the whole church being dedicated to the Blessed Virgin. If there were aisles, I think they would have been shown, as the drawing is the largest of any on the map, and in the representations of much smaller churches, aisles are distinctly to be seen. The lines indicating buildings beyond, do not, I am of opinion, represent the parish church of Buckland Monachorum, but the Abbey buildings, and if so, here again the substantial

* "Turres lapideæ ad campanas non flant, nec lignæ altitudinis immoderate, quæ ordinis dedecant simplicitatem."—*Nom. Dist.*

accuracy of the map is proved. One thing in the drawing I do not understand, the door-way shown in the transept. As a general rule the conventual buildings of the Cistercians were on the south side of the church, but occasionally, when the nature of the ground prevented their being so placed, we find the buildings on the north, and so it was at Buckland. The Cistercians, and indeed nearly all monks, loved the valleys, and they preferred shelter to the *lex non scripta* of the order. Here, on the south side of the church, the ground rises somewhat suddenly, and without a good deal of excavation sites for the buildings could not have been obtained. To the north, therefore, the monks went, and I think we may conclude that the chapter-house, the refectory, and the bulk of the buildings were on the north side of the cloister.

Leland only just refers to the Abbey, and no further information is attainable with reference to the buildings until we come to Buck's view, published in 1734, in which, although as to the surrounding scenery, and also in the drawing of some portions of the remains, there is a considerable amount of romance, it shows, that various alterations have been made, and some buildings altogether removed. Nearly fifty years later we have a plan of the house and its surroundings, to which the same remarks apply, many erections being there shown which cannot now be found. None of these help us in fixing the site of the conventual buildings; nor will the three important buildings still remaining, to a great extent intact—the church, the porter's lodge (after which I put a query), or the barn—render us much assistance.

38. On visiting the house (for Abbey now is a misnomer), after passing down one of the noble avenues leading thereto, and resting on the high ground to the north to admire the magnificent view of the country, on the banks of the Tamar and Tavy, stretching far away towards the sea, we shall find ourselves in a narrow valley shut in on the north, south, and east, with the ground gently sloping towards the west, until the little stream we cannot fail to notice falls into the river some short distance below. A spot more suitable for the Cistercian could not be found. Far from the busy town and haunts of men, and yet sufficiently near for the sale of wool, and for disposing of the produce of their farms, the monks settled down to their varied tasks, and praying and labouring, quickly made their little valley fertile, and caused it to become the centre of a new life.

39. Before the monks from Quarr could take possession, it was necessary that a church, or at least an oratory, for wor-

ship should be provided, with a refectory and dormitory for the monks, a guest-room for strangers, and a porter's lodge. With these the little community started; and soon the more stately church began to rise, with the domestic and farm buildings, the frater, the scriptorium, the long building for the conversi, with sleeping-rooms above, and the great barn. The little stream was diverted into various channels, and used in different ways. One channel was the common sewer of the monastery, another, carefully banked and tended, led to the fish-ponds, important sources of supply in a Cistercian house. And so the Abbey of Buckland grew, and with their home barton of nearly 800 acres, besides a large extent of moorland and pasture, with outlying farms, the little band had soon work enough to occupy their time and thoughts. And so they worked until the crash came, and they were sent forth to live as best they might on the pensions allowed them.

40. There has been found on the south side some little building rubbish, but there is nothing to lead us to suppose that there was anything of consequence on this side. The cloister was probably on the north-east. Just inside the gate of the garden is an old wall, shown in Buck's view, running almost from north to south. At the extreme south end on the western side is a recess with a stone seat, and this wall may be the eastern wall of the cloister. West of this is a building, which I think may be the porter's lodge, and perhaps a part of the entrance gate. It is now used with the stables. The window in front is really a blocked-up door-way, opening into a little hall or porch, lighted with a window on the north. Below is a cellar, with a window west, and opposite the window an entrance (now blocked up) to some place beyond. Over the little hall is a small room, reached by a newel staircase in the turret, and over this a platform. The platform on the top of the turret is reached by the continuation of the staircase. The whole appears to be late fourteenth century work; but in the arch in the cellar, and in the archway of the entrance, from what I have called the little hall, to the building beyond, whatever it might have been, the character of the earlier work in the church is imitated. This building is always called the bell turret, which it certainly never was. It is shown in Buck's view, and on the plan of 1769, but then apparently connected with the church.

41. Opposite this building, on the last-mentioned plan, are shown various erections not now to be found, but probably represented by a group of buildings which either formed

part of the monastery, or which were constructed with the old materials ; more especially a large door-way facing west may be mentioned, and traces of other buildings extending upwards towards the north may be seen. Nothing certain is known as to the situation of the churchyard, or of any of the important buildings ; but I have no doubt that the foundations of the latter are below the surface, and if excavation was permitted, considerable information with reference to many important matters, of which we are now entirely ignorant, might be obtained.

42. The orchards, now as formerly, are on the north side, west of the monastery, with a south aspect. The remains of three fish-ponds are easily made out, portions of the banks and traps remaining. The grand barn, upwards of 100 feet in length, with its fine door-way, remains externally much as the monks left it. Useful to their successors, the barn was spared the destruction and mutilation suffered by its neighbours.

43. The noble yews and cedars will not fail to attract the notice of the visitor as he approaches the house, otherwise the church, which we now come to. I think we may safely conclude that the present walls are those of the original church, and we have a plan at once simple and unusual,* consisting, as I have mentioned, of chancel, nave, and south transept. The present building is about 130 feet long and 33 broad. The chancel is 24 feet long. The breadth of the transept is 24 feet, and the depth from north to south probably the same, consisting of two bays, the column dividing them still remaining on the east side. The south wall of the transept is gone, and the bay of the tower leading into it is walled up. The capitals of the columns at the junction of the tower and transept are clearly distinguishable, as well as the corbels, drawings of which I have here. These are very interesting, and if they are, as I believe them to be, Early English, Mr. Sharpe tells me that they are the earliest known in Cistercian architecture.

44. Built into a wall over a door-way in the grounds is a large boss of great interest, from which shafts are seen spreading off, and which has evidently been the centre of a groined ceiling. When I first saw it I thought it was a mitred head, but it is clearly the head of a female. The upper pointed part is the head-dress, and below is a coronet, and whether the work is early or late, I have little doubt but that it is intended to represent the features of the

* The plan of Grey Abbey, County Down, Ireland, is similar.

foundress of the abbey, the widowed Countess Amicia. From what part of the abbey it came it is impossible to say, and it is equally impossible to assign a reason for its preservation.

45. On entering the house we shall find that it has been divided into a series of floors, and although somewhat intricate in its arrangements, it makes a very commodious and comfortable residence. It has, however, been so interfered with and so covered with plaster and battened throughout, that an investigation of architectural details is difficult, and in many places impossible. The string course on either side of the nave can be traced here and there from end to end as far as the tower. The tower appears to be perfect. It has been divided into floors. In the second from the top the great arches over the crossing can be traced. On the south and west these are perfect, the latter especially so, the whole of the stonework being uncovered and as sharp as when the workmen left it five hundred years ago. The southern arch is partly built into and plastered, but no doubt perfect. The eastern one is entirely covered up; but I think it is of a different character, being one of construction only, and not of ornament as well. The northern archway is formed of rubble masonry, and is of a different pitch, and I believe that there was a window here. The springers of the vaulting shafts remain, but I am inclined to think that the stone vaulting was never completed. Below the eastern arch we find north and south, parts of the columns, with their capitals, at the commencement of the chancel. The chancel arch was much lower than those of the nave and transept, but of the same character; and there seems to have been another arch of a similar size on the north side of the choir. On the north side of the nave is a very curious and beautifully vaulted little chamber, apparently opening from the tower, and with openings also on the east and west, with a window on the north. I think this must have been a porch or passage leading into the cloister, or in connection with the monks' dormitory, affording from thence easy access to the church. The church is not truly oriented, being situated E.N.E. The Cistercians do not seem to have been particular as to this matter. I have only briefly mentioned these points in connection with the ancient buildings in order to draw attention to them, and in the hope that some one more skilled in working out the details of ancient buildings may take up the subject and give us a full architectural history of the Abbey Church of Buckland.

46. Pass we now to the more modern house into which the

Cistercian Church was converted. The hall is a fine room, decorated with panels and Jacobean carvings in oak, said to have been brought from the manor-houses of Callisham and Durance, in the parish of Meavy, by the Drakes. Some of the figures are beautifully carved, but unfortunately the whole has been painted over. Over the chimney-piece is the date MCCCCCLXXVI. Assuming this date to be genuine, and as it is in plaster and corresponds with the rest of the plaster-work of the hall, I think there is no reason to doubt it, it shows that the conversion was accomplished during the ownership of the Grenvilles, and thus Risdon's statement that Sir Richard Grenville built a fair new house, which certainly he did not, is explained. There is no doubt, I think, that he destroyed the greater part of the monastic buildings, completed the house, and laid out the surrounding land in pleasure-grounds and gardens.

47. Sir Francis Drake has left no traces of his possession of the abbey, but the old bowling-green is shown on the map of 1769. In the staircase is a portrait of Don Pedro de Valdez, one of the vice-admirals of the Spanish Armada, who was taken prisoner by Drake, and kept by him at Buckland Abbey until his friends had paid the round sum which Drake doubtless required as his ransom; although, as Speed says, "Sir Francis his souldiers had well paid themselves with the spoile of the shippe, wherein were 55,000 ducats in gold, which they shared merrily among them."* The rest of the officers and men were detained in Plymouth for eighteen months until the ransoms arrived, and no doubt the Don spent the same length of time with his captor. His portrait shows him to have been every inch a Spanish cavalier—a noble figure, with handsome features, presenting a strange contrast to the portrait of Drake, whose appearance is the direct opposite in every respect.

48. In one of the floors of the tower, the second, is a mantel-piece with the shield, crest, and motto of Sir Francis in plaster. On the left side or flank is a shield bearing the ancient arms of the Drakes—a wyvern displayed, quartered with the new grant of a fess-wavy between two polar stars. Below is the date 1655 and the letters R. N. Sir Francis Drake, the second baronet, the great nephew of the Sir Francis, whose portrait is also at Buckland Abbey, was at this time in possession of the estates, but I cannot explain

* Barrow's *Life of Drake*, p. 131. The ship was the *St. Francis*, a galleon of 50 guns, and with a crew of 500 men. See *English Mercury*, No. 60, July 23rd, 1588.

the meaning of the letters R. N. On the right flank of the chimney-piece are two shields, the first apparently a bird naiant, and the second three mullets within as many in crescents 2 and 1, with an acorn as a crest. Dr. Drake has suggested to me that the former may be a canting coat—a duck or drake swimming upon water. The second shield is that of Gregorie,* of Plympton St. Mary. Elizabeth Gregorie married first John Elford, of Sheepstor, and secondly Thomas Drake, the brother and heir of Sir Francis.

49. As every guide-book says, relics of the great navigator (these words seem indispensable) are to be found at the abbey. His drum (really there are two), and his Bible, sword, and shield, the two latter, most unlike what he would probably have used, are to be seen. In the dining-room is the well-known portrait of Sir Francis, and in the staircase, besides those of Don Pedro de Valdez and the second baronet, are two other family portraits, and a painting, apparently an allegorical subject, supposed to refer to some incident in the history of the Drake family. The other portraits are those of Charles II. in armour, and his queen, and Nell Gwynne.

50. The translations in the Appendix of some of the documents relating to the abbey will be found of interest. The names of places have not much changed, and the boundaries of the properties can be approximately ascertained.

DOCUMENTS.

A.

The following documents relating to Buckland Abbey will be found as under :—

Carta Regis Edwardi Primi. (Called “*Edwardi Secundi*” in Dugdale.)—*Ibid*; Dugdale, vol. v. p. 714; Oliver, p. 384.

Carta fundationis per Amiciam Comitissam Devonie. *Cart.* 8 Ed. I. n. 85.—Dugdale, vol. v. p. 712; Oliver, p. 382; trans. App. (C).

Carta Amicie Comitissæ Devonie, &c.—*Ibid*; Dugdale, vol. v. p. 714; Oliver, p. 384.

Carta Walteri Exon Episcopi.—*Reg. Exon. Epis.*, f. 96; Dugdale, vol. v. p. 713; Oliver, p. 383; Oliver, *Hist. Col.*, p. 71.

Carta alia Walteri Episcopi.—*Reg. Bronesc.*, f. 97; Dugdale, vol. v. p. 713; Oliver, p. 383; Oliver, *Hist. Col.*, p. 72.

Carta Isabellæ de Fortibus Comitissæ Albemarle.—*Pat* 9, Hen. IV. p. ii. m. 18; Dugdale, vol. v. p. 713; Oliver, p. 383.

De Libertatibus Abbatis de Bocland.—Oliver, p. 384.

* Az. within three in crescents or, as many mullets ar.

De Damno facto abbati de Bocland per minerarios et custodes mineræ regia.—Oliver, p. 385.

Compositio inter abbatem et conventu de Bocland et abbatem et conventu de Ford de secta hominem de Tale ad hundredum de Harige.—Oliver, p. 385.

Indulgentia pro adjuvantibus ad fabricum Ecclesiæ Cathedralis Exoniæ consummandum.—Oliver, p. 386.

Taxatio et ordinatio vicariæ de Walkhampton.—Oliver, p. 386.

Conventio inter abbatem de Buclond et quendam Belworthi pro sectâ ad hundredum de Rowborough.—Oliver, p. 386.

Ordinatio vicariæ de Bickleigh et visitatio ibidem.—Oliver, p. 387.

Appropriatio ecclesiæ parochialis de Baunton, taxatio vicariæ ibidem, et diversæ facultates factæ et concessæ per literas papales.—Oliver, p. 388.

B.

CONFIRMATION BY THE KING OF THE GIFT TO AMICIA.

Edward, by the grace of God, King of England, Lord of Ireland, and Duke of Aquitaine. To all to whom this writing shall come, greeting. Know ye that we have conceded and confirmed to Amicia, Countess of Devon, the manor of Buckland, with the hamlets of Columpton, Walkhampton, and Bickeley, together with all and singular their appurtenances wheresoever situate; To have and to hold to the same Amicia, according to the form and tenor of the deeds which she had from the gift of Isabella de Fortibus, Countess of Albemarle, her daughter; And if it shall happen that the said Amicia should wish to give and to assign the said manor and hamlets with all their appurtenances whatsoever to religious men, and with them to found a new religious house, know ye that we for ourselves and for our heirs, will consider and accept that gift as acceptable, provided that the said house, after the decease of the said Amicia, shall be held of us and our heirs *in capite*. And we faithfully promise to confirm it, when founded or appointed, in pure and perpetual alms. In witness, &c. Witness myself at Odiham, 8th day of August, in the 4th year of our reign.

C.

THE DEED OF FOUNDATION.

In the name of the most glorious and undivided Trinity, the Father, the Son, and the Holy Ghost, Amen, and by the favour of the most Blessed Virgin Mary and of the Blessed Benedict, we, Amicia Countess of Devon and Lady of the

Iste, trusting in the goodness of the Supreme Maker of all good things, who disposes the wills of both men and women at his pleasure, and faithfully directs them though unseen, and sustains our hope by the revelation of His mind if we offer anything in perpetual memory to the honour of His name; We found the Abbey, which we desire should be called or entitled St. Benedicts of Buckland, which is in our manor of Buckland, for the perpetual maintenance of abbots and monks of St. Benedict of the Cistercian order there to dwell, for the health of the souls of the Lord Henry, formerly King of England, the noble Queen Dame Eleanor his wife, and their children, of the Lord Edward, our illustrious King of England, the son of the same Henry, the noble Queen Dame Eleanor his wife, and the children of the same, and for the health of the souls of the Lord Gilbert of Clare, formerly Count of Gloucester and Hertford, our father, and the Countess Isabella, our mother, and the souls of Baldwin, Earl of Devon, our husband, and Isabella our daughter, Countess of Devon and Albemarle, and Margaret, our daughter, nun of Lacock, and for the souls of all our ancestors and descendants, and of all to whom we are bound for any kindness, we set apart, and give, concede, and have assigned as an abode and abbey for the aforesaid abbots and monks, and we decree that abbots and monks of the aforesaid order shall dwell for ever in the same abbey. And to this abbey, to Brother Robert, the abbot, and for the support of the monks dwelling in the same house, which have been bought by us from Quarr Abbey, and to their successors, for ever in honour of God and of the most Blessed Mary, Mother of God, and the Blessed Benedict; we give and we grant the same our manor of Bocland, and our manors of Columpton, Bykeley, and Walkampton, with the advowsons of the churches, and with the hundred of Rugheberewe, with all service, as well of free-tenants, villiens, as of others belonging to the said hundred, with all their appurtenances, as in demesnes and seigniories, military service, services of freed men, villeins and villanages, with their chattels suits, reliefs, aids, rents, heriots, heirships, escheats, aids of every kind, meadows, pasturages, pastures, ways, paths, woods, arable land, mills, waters, fisheries, moors, heaths, turbaries, together with all liberties and free customs acquired by us for the same abbey, with all other appurtenances, named and not named, which belong to the said manors and hundred, or which can in any way belong by whatever name they may be known, without any reservation by us, or by our heirs, and

we have confirmed the same by this present charter to the said abbot and convent and their successors, to be held in free and full alms for ever, freely, quietly, well and peaceably for ever, without any contradiction or impediment by us or our heirs.

And we, the said Amicia and our heirs, will warrant, and acquit, and for ever defend the said abbot and convent and their successors to the manor, with the advowson of the churches and with the said hundred together with all liberties and free customs, and other appurtenances, named and not named, which to the said manor and the said hundred in any way belong or can belong in holy, pure, and perpetual alms, as aforesaid, against all Nations, whether Christians or Jews. And that this my gift, concession, and confirmation of this my present deed may remain firm and binding, we have caused this our seal to be placed unto this deed. Witnesses Hugo Peverell, William of Bikells, Thomas of Pyn, Warren of Secchevill, Reginald de Ferrars, Knights, John of Valletort, Richard Meavy, Ralph of Lenham, Stephen of Stoyll, Baldwin the Bastard, Humphrey of Donesterre, and others.

D.

DEED OF AMICIA COUNTESS OF DEVON.

Know all men, now and to come, that we Amicia Countess of Devon and Lady of the Isle [in our lawful widowhood] with the thought of God and for the health of the souls of Lord Henry, formerly King of England, and the noble Queen Dame Eleanor, his wife and their children, and of the Lord Henry, formerly King of England, son of the same King Henry and the noble Queen Dame Eleanor, his wife and their children, and for the health of the souls of Lord Gilbert of Clare, formerly Earl of Gloucester and Hertford, our father, and the Countess Isabella, our mother, and Baldwin, Earl of Devon, our husband, and for the health of our souls and the souls of Baldwin, our son, formerly Earl of Devon, and Isabella, our daughter, Countess of Devon and Albemarle, our daughter, nun of Lacock, and of all our ancestors and successors, and of all to whom we are bound by any favours, and of others who do or shall bestow alms or any favours have given and granted, and confirm by this present writing to God, and the Blessed Mary, and St. Benedict, and to Brother Robert and his convent taken from Quarr, and their successors of the Cistercian order in holy, free, pure, and per-

petual alms, for building and perpetually supporting an abbey in honour of Mary, most blessed Mother of God, and the blessed Benedict, the manors of Buckland, Bickley, and Walkhampton according to their metes and bounds; that is to say, from the Lobbapilla, on the western part of Bocland towards the north and east, through the middle of the water of Tavy, and from Walkhampton to the boundaries of Dartmoor, on the northern part of Mistor, and thence towards the south by the boundaries of the Verderers (regardorum) of Dartmoor, that is to say, by Mistorhead (Mistor panna), and by Hysfochres, and by Siwards Cross and Gyllesburgh and Plymcundla to the Plym, and thence by the Plym towards the west to Yaddabrook, and so by the bounds which surround Rydemore and Smalacumba, that is to say, by the old ditch to the angle of the ditch of Yllalonde, and thence by Hurtwallen to Smalacumbacrosse and Smalacumbalak, and by the water course of Meavy to Olyak, and by the ditch to the road which leads from Plympton to Schitestor, and so by the stone bounds to Biricombaford and by Crewecumba, and Denebrok, and [along] the course of the river Meavy to Schollaford, and so by the old boundaries to Yanedonecross, and thence by the bounds to Stoford and Lake and Churchford, and by the divisions between Elleford and Crosse-ton to Elfordlak and to the course of the river Meavy, and so to the place where the Meavy falls into the Plym, and along the Plym towards the divisions of Hescombe, and to the cross roads beyond Purpris, and thence by passing along the way which leads from Cadaworth bridge to Plympton through the land of the Schagh towards the east as far as Shitaburgh, and thence by old bound-stones to Haneketorr, and thence towards the west and north through the land of Farnhill to Maynstonktown and Maynstoncross and Horingbrook and to Writewillak, and thence by a certain footpath to Pudehel, including Southpudehel, and so along the bounds towards the east to Horsford, and thence along the ancient metes to Writewille and Horyngbrok, and so to the Plym and to Wolewillebroke and to Wolewille Cross, and thence by the road which leads from Sutton to Tavistock at Copriscross, and thence towards the north along the ancient ditch to Bycacumbayoneda, and so along the ancient bounds to Lobbapilla.

And the lands and villeins of Tor at Shitestorr, lying near to the manor of Bickleigh, with the appurtenances and with their villanages and chattels and belongings, and the hundred of Roborough, and with all profits thence arising with all

suits of freemen and bondmen, and with everything which belongs or may belong to the said hundred.

We have also given, granted, and confirmed to the same abbot and convent and their successors the lands and villeins of Torr at Schitestor, adjoining the manor of Buckeleye, with their chattells and suits.

We also have given, granted, and confirmed, to the same abbey and convent and their successors the hundred of Roborough with all profits thence arising, with all suits of freemen and villains, and with all liberties, free customs, or whatever things belong to the hundred or can accrue or belong in any way to the same.

We also have given, granted, and confirmed to the same abbot and convent and their successors the manor of Columpton, according to its bounds, that is to say, from Colump by the land of St. Nicholas of Exeter to Smalabrok, and by the outer bounds of the land of la Brok to the road which leads to Padokbrok, and thence by Lutteskeskell and Ponteford, and by the boundaries from Hillesdon to Burn, and by Linor and Sweton, and Morston and Burn to Culump, and so by la Nywelond to Rotherford Bridge, and a certain piece of land on the eastern part of that water near Kyngesmill, and thence by Stonweya, Crundla, Waterleta, Halstrewa, Westerhays, and Lattemere, to Cliffbrigg, with the lands of Halsholte, and the meadows and woods of Swenham, and with the advowsons of the churches of Boclond, Walkampton, and Bykelie, with the chapel of Schitestorr, with all that to the same manor and lands, and to the same hundred belong, whether in suit of court, demesnes, seignories, knight's fees, homage, scutage, service of free men, &c., without any reservation by us or our heirs. To have and to hold freely of the lord the king and his heirs to the same abbey and convent, and their successors, the same manor and lands, with the advowsons of the churches of Boclond, Walkampton, and Byklie, and the chapels of Schitestorr, and with the aforesaid hundred, with all their appurtenances whatsoever in holy, free, pure, and perpetual alms, free, &c. These being witnesses, Sir Henry of Chaumbernon, Oliver de Denham, Hugo Peverell, &c.

E.

CHARTER OF ISABELLA DE FORTIBUS WITH METES AND BOUNDS.

To all the faithful in Christ to whom this present writing shall come, Isabella de Fortibus, Countess of Albemarle and Devon and Lady of the Isle, health in the Lord; Know ye that

we have granted and confirmed and by this present writing quit claim for ourselves and our heirs, to God and the monastery of the Blessed Mary and the Blessed Benedict of Buckland, and to the Abbot and Convent, and to their successors of the Cistercian order serving God in the same monastery, and to all those who shall hereafter serve him (there), all gifts and grants which the noble woman, our dearest mother Lady Amicia, formerly Countess of Devon and Lady of the Isle, obtained and gave to the same, namely, the manors of Bocland, Bykelie, and Walkampton, according to their metes and divisions, that is to say, from the Lobbapilla, on the western part of Bocland towards the north and east, through the middle of the water of Tavy, and from Walkhampton to the boundaries of Dartmoor, on the northern part of Mistor, and thence towards the south by the boundaries of the Verderers (regardorum) of Dartmoor, that is to say, by Mistorhead (Mistor panna), and by Hysfochres, and by Siwards Cross and Gyllesburgh and Plymcundla to the Plym, and thence by the Plym towards the west to Yaddabrook, and so by the bounds which surround Rydemore and Smalacumba, that is to say, by the old ditch to the angle of the ditch of Yllalonde, and thence by Hurtwallen to Smalacumbacrosse and Smalacumbalak, and by the water course of Meavy to Olyak, and by the ditch to the road which leads from Plympton to Schitestorr, and so by the stone bounds to Biricombaford and by Crewecumba, and Denebrok, and [along] the course of the river Meavy to Schollaford, and so by the old boundaries to Yanedonecross, and thence by the bounds to Stoford and Lake and Churcheford, and by the divisions between Elleford and Crosseton to Elfordlak and to the course of the river Meavy, and so to the place where the Meavy falls into the Plym, and along the Plym towards the divisions of Hescombe, and to the cross roads beyond Purpris, and thence by passing along the way which leads from Cadaworth bridge to Plympton through the land of the Schagh towards the east as far as Shitaburgh, and thence by old bound-stones to Haneketorr, and thence towards the west and north through the land of Farnhill to Maynstonktown and Maynstoncross and Horingbrook and to Writewillak, and thence by a certain footpath to Pudehel, including Southpudehel, and so along the bounds towards the east to Horsford, and thence along the antient metes to Writewille and Horyngbrok, and so to the Plym and to Wolewillebroke and to Wolewille Cross, and thence by the road which leads from Sutton to Tavistock at Copriscrosse, and thence

towards the north along the ancient ditch to Bycacumbayoneda, and so along the ancient bounds to Lobhapilla.

And the lands and villeins of Tor at Shitestorr, lying near to the manor of Bykelie, with the appurtenances and with their villanages and chattels and belongings, and the hundred of Roborough, and with all profits thence arising with all suits of freemen and bondmen, and with everything which belongs or may belong to the said hundred.

And the manor of Columpton according to its bounds, that is to say from Colump by the land of St. Nicholas of Exeter to Smalabrok, and by the outer bounds of the land of la Brok to the road which leads to Padokbrok, and thence by Lutteskeskell and Ponteford, and by the boundaries from Hillesdon to Burn, and by Linor and Sweton, and Morston and Burn to Culump, and so by la Nywelond to Rotherford Bridge, and a certain piece of land on the eastern part of that water near Kyngesmill, and thence by Stonweya, Crundla, Waterleta, Halstrewa, Westerhayes, and Lattemere, to Clifbrigg, with the lands of Halsholte, and the meadows and woods of Swenham and their appurtenances. And the land of Lygh with its appurtenances in Sampford Spiny. And the advowsons of the churches of Bocland Walkampton and Bykelie with the Chapel of Scitestorr. And all things which belong to the aforesaid manors and lands, and to the aforesaid hundred whether in suits of courts, rights, seignories, military service, homage, scutage, services of freemen, bondmen, with their services, chattels and suits, wards, marriage rights, reliefs, aids, rents, heriots, and escheats of all kinds, with meadows, pastures, pasturages, ways, paths, woods, arable land, mills with their dams and tolls, dove cotes, waters, fisheries, fish ponds, alder beds, moors, wastes, heaths, turbaries, strays, waifs, together with all liberties and free customs, and all other things, and appurtenances named and not named, which belong to the said manor and land, and to the said hundred or which from them to us, or to our heirs may accrue without any reservation or demand; to have and to hold the aforesaid manors, lands, hundred and advowsons of churches, and the aforesaid chapel with all their liberties, possessions, and appurtenances, by whatever name known, of our lord the king and his heirs, to the aforesaid abbot and convent, and to their successors of the aforesaid order, freely, quietly, entirely, absolutely, well, and in peace, without any exaction or demand, actions, or hindrance from us or of our heirs, in free and pure alms for ever.

And we the said Isabella will for ever acquit and defend

to the said abbot and convent, and their successors, the said manors and lands, advowsons of churches, and the said chapel, and the aforesaid hundred with all their liberties, things, and appurtenances, named and not named, against all nations, Jews or Christians. In witness whereof we have affixed our seal to the present charter with these witnesses, Brother Richard, prior of Christ Church, Twynham; Brother Thomas, prior of Brommor; Sir Richard, Fitz John, Richard of Affeton; Hugo of Peverell; Gilbert of Knovile; Reginald of Ferrers Knights; Ralph of Lynham; Stephen Stoil; William of Stapeldon; Simon of Travailesworth; William of Budekeside; Robert of Coleford; and others. Given at Brommor, the Feast of St. Edmund, King and Martyr, 1291.

F.

AWARD OF THE PRIOR OF PLYMPTON AND JAMES CHUDLEIGH.
THE PRIOR OF PLYMPTON, ETC.

To all the faithful in Christ to whom the present letters indented shall come. We, William the Prior of Plympton and James Chudleigh, Esq., send greeting in the Lord everlasting. Whereas divers suits and discords have been moved between William the Abbot of the House and Church of the blessed Mary of Bokelond of the one part, and James Derneford, Esq., of the other part, at length, by the intervention of friends between the parties aforesaid, peace hath been obtained in this manner; viz., that the parties aforesaid have submitted themselves to stand our judgment, ordinance, and award in the premisses, whereupon the aforesaid abbot by his council hath declared to us that whereas he and his predecessors from time to time, to the contrary whereof the memory of man is not, have held, and of right ought to have, the hundred of Roweborgh and a court of view of frankpledge, to be holden three times in the year at Roweborgh, and all which to view of frankpledge pertains, and also chattles of felons, fugitives, and escapes, of thieves, tumbrel, gallows, and pillory, with all the suit of free men and villeins, and with all liberties, free customs, or whatsoever things which to the hundred do pertain, or in any manner may accrue or pertain, as of the right of his church aforesaid. Nevertheless the aforesaid James Derneford hath caused to be set up a certain pillory and tumbrel at Estonhouse, and hath caused a certain court to be holden at Estonhouse, within the precinct of the hundred aforesaid, and there hath caused to be presented in his court aforesaid by his ministers the assize of

bread and ale there levied, and effusion of blood and of arms and injuries done against the peace, and other articles which ought to be presented in the view of frankpledge at the hundred aforesaid; and hath refused the bailiffs and ministers of the said abbot to levy amerancements and distress at Estonhous of himself and his tenants there, and hath caused such and so many injuries to them that they are greatly impeded about the business of the said abbot in exercising his office there, so that the same abbot hath lost the profit of his hundred aforesaid for five years past, which he ought to have received within the precinct of his visne of the manor of Estonhous aforesaid during the same time; whereupon the aforesaid J. Derneford being summoned before us, the aforesaid arbitrators says that he does not claim any right in the premises, or any parcel thereof, as against him is declared, nor hereafter intends to claim, but supposeth himself to be thereof not guilty. Therefore we the arbitrators taking upon ourselves the burthen of the arbitration, having heard the proofs thereof and mature deliberation thereupon had, do arbitrate, order, and adjudge on Thursday next after the feast of Saint Barnabas the apostle, in the 26th year of the reign of King Henry VI. at Boklond Monochorum, that the aforesaid pillory and tumbrel and every of them, together with appurtenances and supports, before Thursday next coming, shall be deposed, destroyed, and removed, and thereafter not erected, nor the same or any other be there used by the aforesaid James Derneford, his heirs, or assignes, or by any other by his procurement. Also we arbitrate, order, and adjudge that the aforesaid James Derneford and his heirs shall not hereafter hold any court with view to frankpledge at Estonhouse aforesaid, nor on any manner intromit himself, nor delay the said abbot and his successors concerning any articles which to view of frankpledge pertain, and he and his heirs shall permit the bailiffs and ministers of the said abbot and his successors at Estonhous aforesaid to collect, levy, and distrain the amerancements, fines, executions, and other emoluments whatsoever which in the court of the hundred aforesaid so come, or in anywise hereafter may come, and to make summonses and executions, and also distresses and attachments there, and the distresses and attachments to there made to lead, drive, and carry away, and to retain in their custody without the contradiction, impediment, or disturbance of the aforesaid James Derneford and his heirs, tenants, servants, ministers, or other whomsoever by his abatement or procurement in any manner. Also we arbitrate, order, and

adjudge that the aforesaid James Derneford shall pay to the aforesaid abbot and his successors, before the feast of St. Michael the archangel next coming after the date of presents, £20 for his costs and expenses which he hath sustained against the said James Derneford by occasion of the disturbance of the ministers of the said abbot in exercising his office in Estons hous aforesaid, and by reason of the execution and levying of the pillory and tumbrel aforesaid to be paid in favor of the said abbot by our award. Also we arbitrate, order, and adjudge that the security of this our award may for ever remain secure and be unbroken and be also secured in law as by the advice and counsel of Henry Fortescue and Wm. Hyndeston before the feast of St. Michael the archangel next coming shall and may be desired. In witness whereof we the aforesaid prior and James Chudleigh to these indentures have set our seals, dated the day, year, and place above said, and hereupon the aforesaid Henry Fortescue and Wm. Hyndeston on Thursday in the feast of the beheading of St. John the Baptist, in the 26th year of the reign of King Henry VI., at Bokelond Monachorum, have advised and given council upon the award, order, and judgment aforesaid that the aforesaid abbot, or some one of his successors of the house and church aforesaid do, or ought to, prosecute against the aforesaid James Derneford, Esq., an action of trespass according as the law on that behalf demands and requires concerning the matters whereof the aforesaid award, order, and judgment are by the aforesaid arbitrators made and rendered. And the aforesaid James Derneford, in his proper person or by his attorney, in the same action ought to plead, have, and defend himself according to the advice and counsel of the aforesaid abbot or his successors, at the costs and expenses of the said abbot or his successors ; so that after judgment in the action aforesaid given, the damages, costs, and expenses by the said abbot or his successors recorded to the aforesaid James his attorney, be released, and in nowise levied.

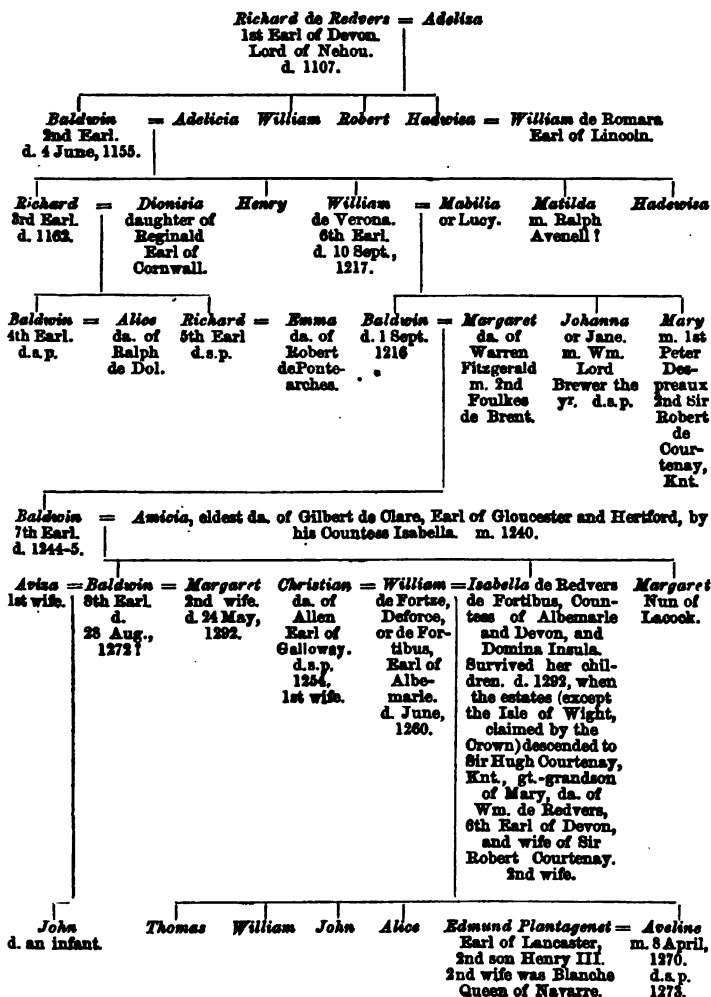
LIST OF THE ABBOTS OF BUCKLAND.

Name.	Approx. Date.	Authorities.
1. Robert.	1281?	Pleadings in Gyreband's complaint.
2. William.	1288	Named in grant by Margaret de Riparia.
3. Geoffry.	1305	Rolls of Parliament.
4. Thomas.	1311	Proceedings in claim upon the Priory of Plympton.
5. William.		Agreement with Ralph de Bellworthy.
6. Thomas Wappelegh.	1356	Oliver.
7. John Bryton.	1385	Oliver.
8. Walter.	1392	Oliver.
9. John.	1442	Lease to William Pomeroy and others.
10. William Rolff.	1448	Proceedings against Derneford. Epis. Reg.
11. John Spore.	1449	Oliver.
12. John Hylle.	1454	Episcopal Registers.
13. Thomas Olyver.	1463	Episcopal Registers.
14. John Brundon.	1508?	Oliver.
15. Thomas Whyte.	1511	Leases. Agreement with Derkeham.
16. John Toker.	1528	Episcopal Registers, &c.

H.

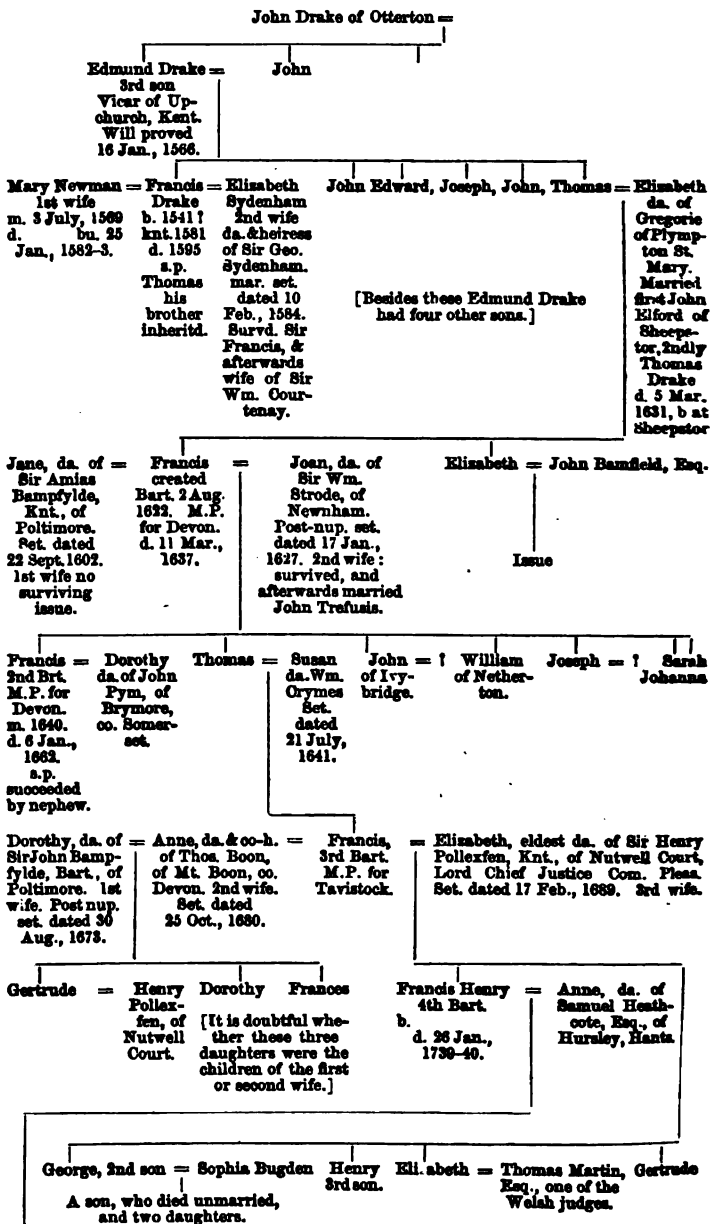
PEDIGREE OF THE REDVERS FAMILY.

Abridged from Oliver and Pitman Jones' Pedigrees of the Courtenay Families.



I.—DRAKE PEDIGREE.

NOTE.—The earlier pedigree and the connection of Sir Francis Drake with the Drakes of Ash is being worked out by Dr. Drake.—See *Arch. Journ.*, vol. xxx. p. 359.



Francis Henry 5th Bart. b. 26 Aug. 1723 d. 19 Feb. 1794 when the estates passed to his nephew, the 2nd Lord Heathfield.	Francis William of Hillingdon, co. Middlesex. Vice-adm. of the Red. Fapt. 23 Aug., 1724. d.	= Elisabeth da. of Sir Wm. Heathcote, Bart. m. 1763.	Francis Samuel = Pooley da. Rear-adm. m. Geo. Onslow, 1788. Created Esq. Bart. 12 Aug., 1782. d. 1789. s.p.
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Two daughters.

Anne Pollaxfen = Sir George Augustus Heathfield, created
Baron Heathfield 6 July, 1787.
d. 1790.

Francis Augustus Eliott
2nd Lord Heathfield. d. 26 Jan.,
1813, and the title became ex-
tinct. Succeeded to the Drake
estates on the death of his uncle,
Sir Francis Henry Drake, the
4th Bart., 19 Feb., 1794.

Anne Eliott = John Trayton Fuller
of Ashdown House,
Sussex.

Augustus Eliott Fuller
b. 7 May, 1777.
m. 1801. d. 1857.
s. & h.

= Clara, eld.
da. & co-h.
O. P. Mey-
rick, of
Bodorgan,
Anglesea.

Issue

Francis John
Capt. 50th
Dragoons.
d. unmarrd.
2nd son.

Thomas Trayton = Eleanor
3rd son. Assumed only da.
surname and arms of Jas. Halford,
of Eliott and Drake. Esq., of
Created Bart. Lale-
22 Aug., 1821, with ham,
rem. failure male Middle-
issue to his brothers sex. d.
William Stephen and Rose-Henry. 18 Sept.
b. 8 Feb., 1785. 1841.
m. 5 Aug., 1819.
d. 6 June, 1870. s.p.
Succeeded by his
nephew, the present
Bart. Became entd.
under set. made by
Sir Francis Henry
Drake, 5 Bart.

William Stephen
4th son.
Capt. R.N.
d. 10 Sept., 1815.
s.p.

Rose-Henry = Margaretta
Capt. R.N. da. of Sir
b. 1789. Robert
m. 1831. Sheffield,
d. 1860. Bart.
5th son.

Margaretta
da. of Sir
Robert
Sheffield,
Bart.

Robert Fitzherbert = Ursula, da.
In holy orders. of Sir
6th son. Robert
Sheffield,
Bart.

Ursula, da.
of Sir
Robert
Sheffield,
Bart.

Eliza = Jno Hamilton
2 Sarah Maria
3 Cordelia Eleanora
4 Louisa
5 Charlotte

Issue

Francis George Augustus Fuller Eliott Drake
b. 24 Dec., 1830. m. 1861. Succeeded his
uncle as second Bart. new creation, 6 June,
1870. Late Capt. Royal Horse Guards. Took
by royal license, 3 Oct., 1870, additional sur-
names and arms of Eliott and Drake.

= Elisabeth, daughter of Sir Robert
Douglas, Bart., of Glenbervie.

Jane Eliza Anne Pollaxfen = Rev. Robert Briscoe,
eld. da. m. 3 April, 1866. D.D., Rector of
Nuthfield, Surrey.

Rev. Robert Briscoe,
D.D., Rector of
Nuthfield, Surrey.

Eleanor Halford = Charles Eales
m. 7 Aug., 1856. Esq., of East-
d. 21 Oct., 1868. don, Devon.
s.p. 2nd. da.

Charles Eales
Esq., of East-
don, Devon.

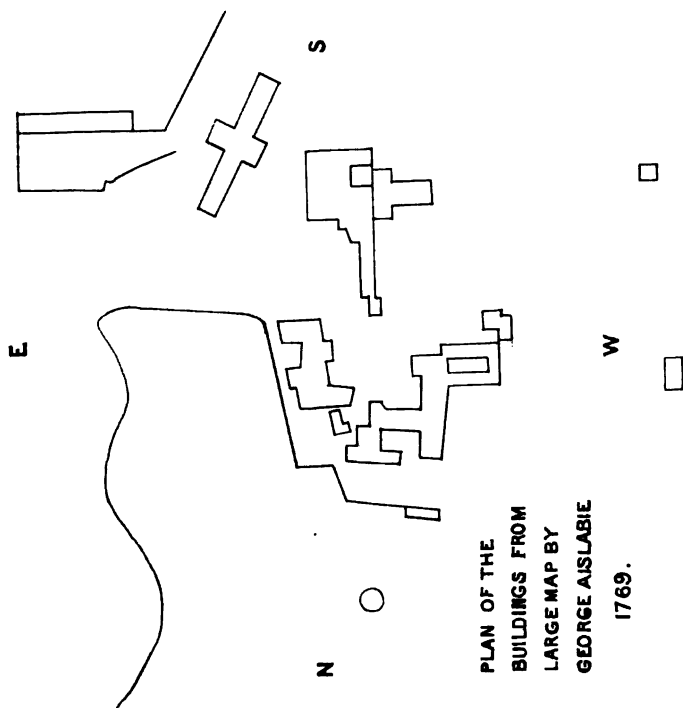
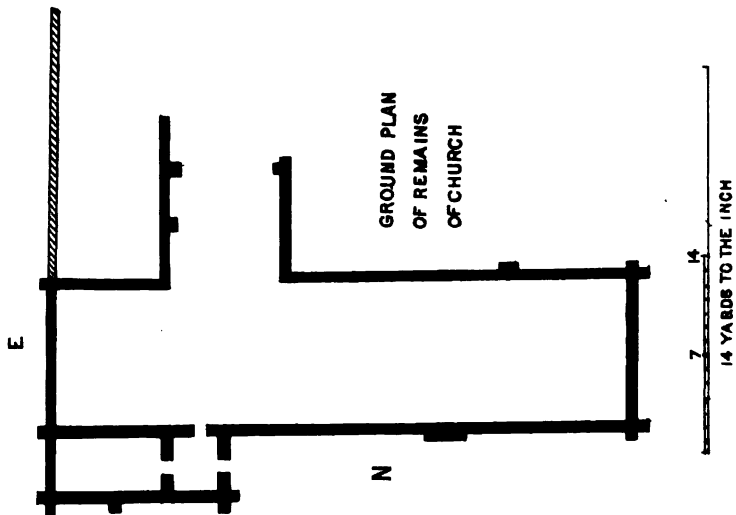
Son born
15 Oct., 1867.

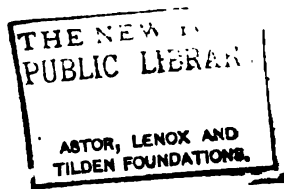
Son born 3rd Nov., 1871.
d. 1873.

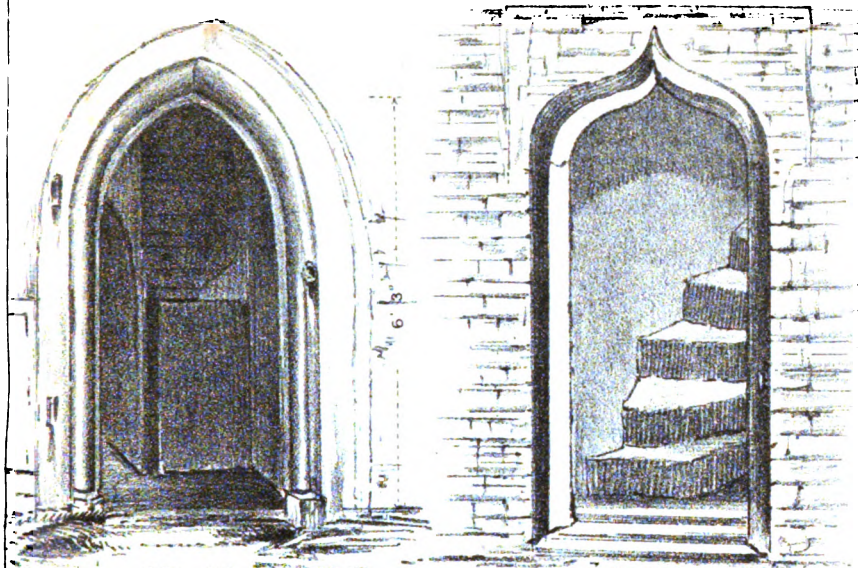
Elizabech Beatrice.

DESCRIPTION OF PLATES.

- I. *a* Plan from Aislaby's map of the estate, hanging in the upper corridor at Buckland Abbey, referred to par. 37.
b Ground-plan of the remains of the Church (approximate).
- II. *a* and *b* Door-ways in the Turret of the building (plate VI.), described in par. 40.
c The Abbey Church from the Perambulation Map, slightly enlarged, par. 37. See also *Transactions Devonshire Association*, vol. v. p. 512.
- III. *c* Capitals of columns.
- IV. Western Arch of Tower, showing springer of the Vaulting shafts.
- V. *a* Boss Head of the Countess Amice (?) par. 43.
b and *c* Corbels in Transept.
- VI. West elevation of building referred to in par. 40.
- VII. Seals and Arms of the Abbey, described par. 27.
- VIII. Plaster Chimney-piece in the second floor of the Tower, with the arms of Sir Francis Drake, granted him 20 June, 1581, and the double motto. On the flanks, are the shields mentioned in par. 50.

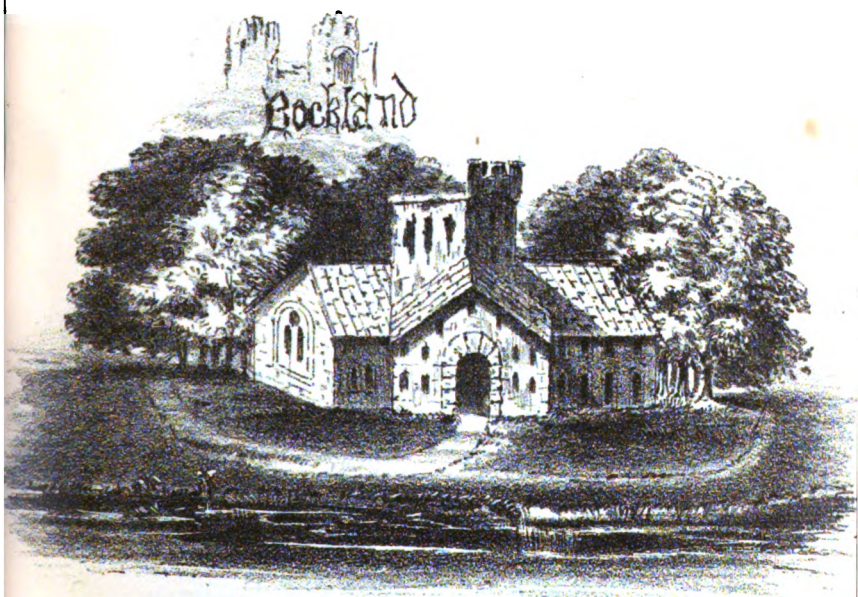






2 FT 3 IN
DOOR-WAY LEADING
TO TURRET.

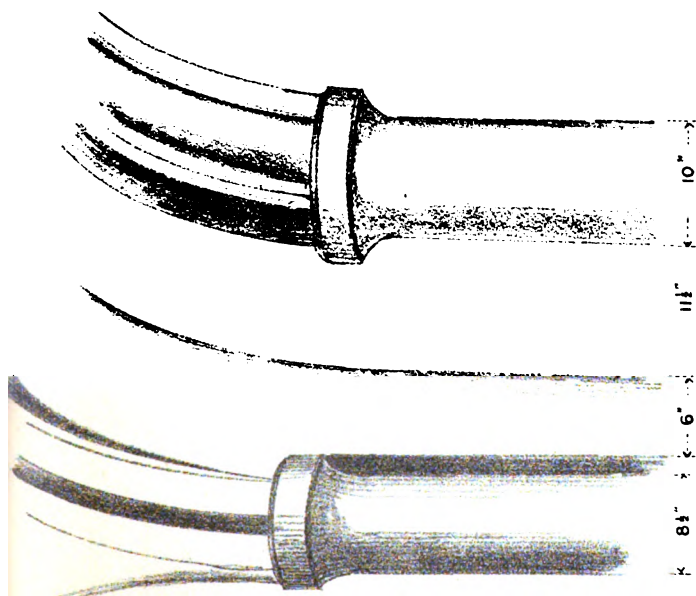
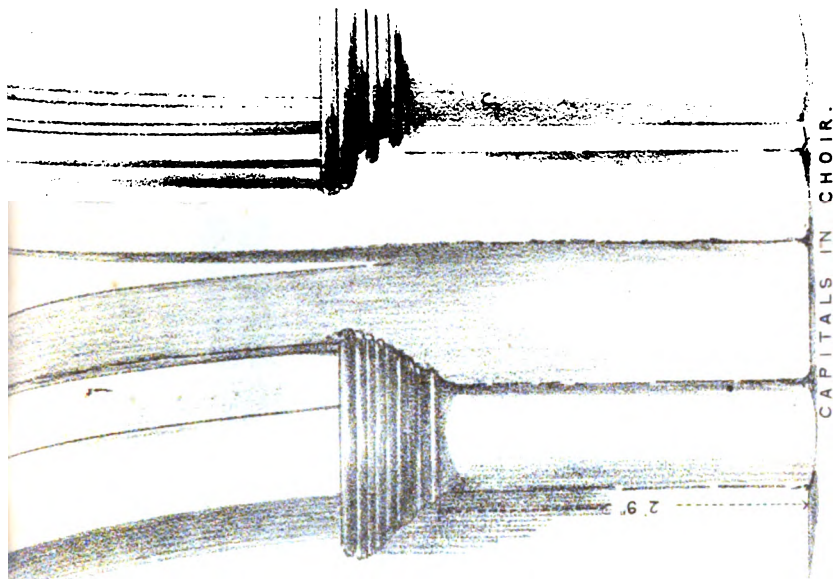
DOOR-WAY IN ROOM
IN TURRET.



ABBAY CHURCH FROM DARTMOOR PERAMBULATION MAP.

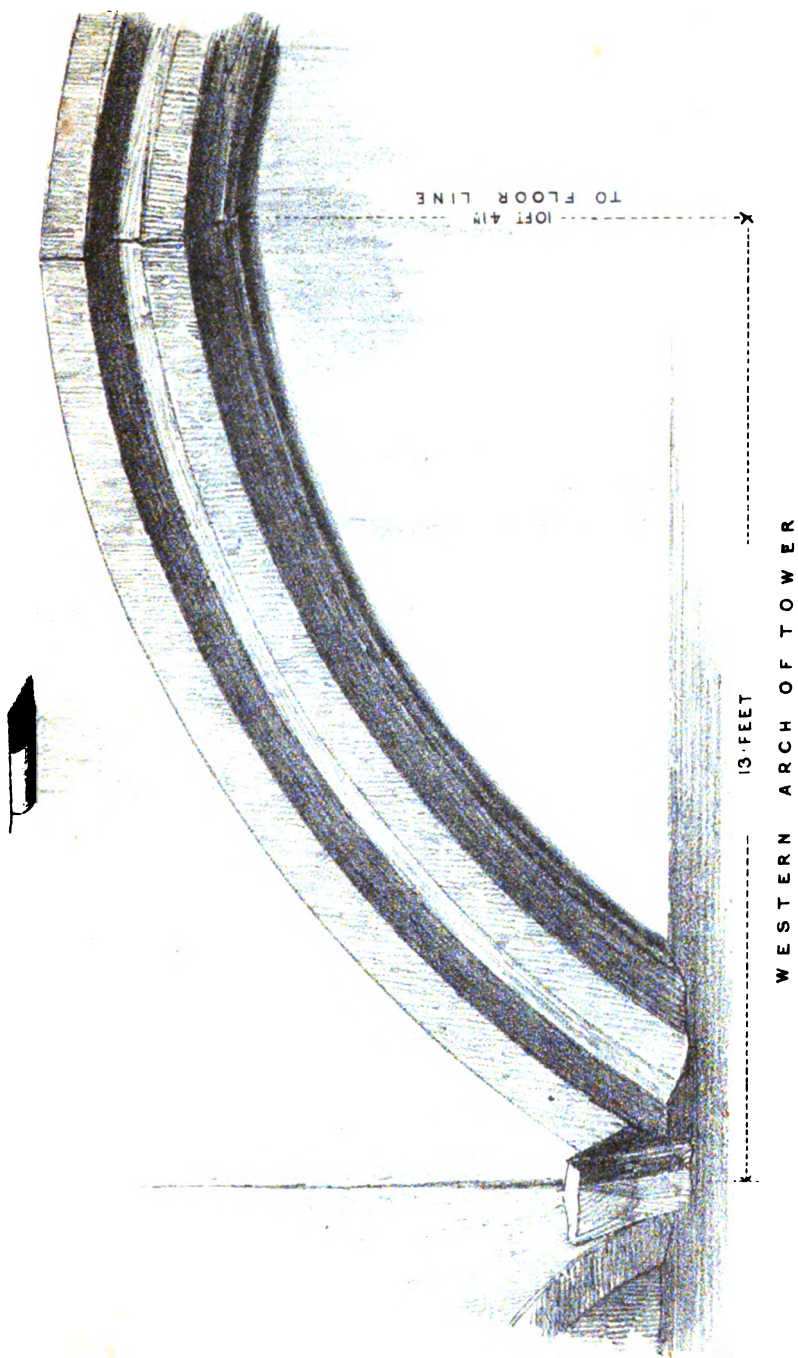
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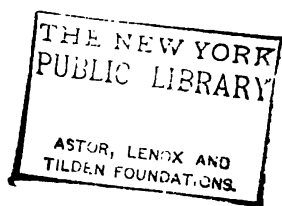
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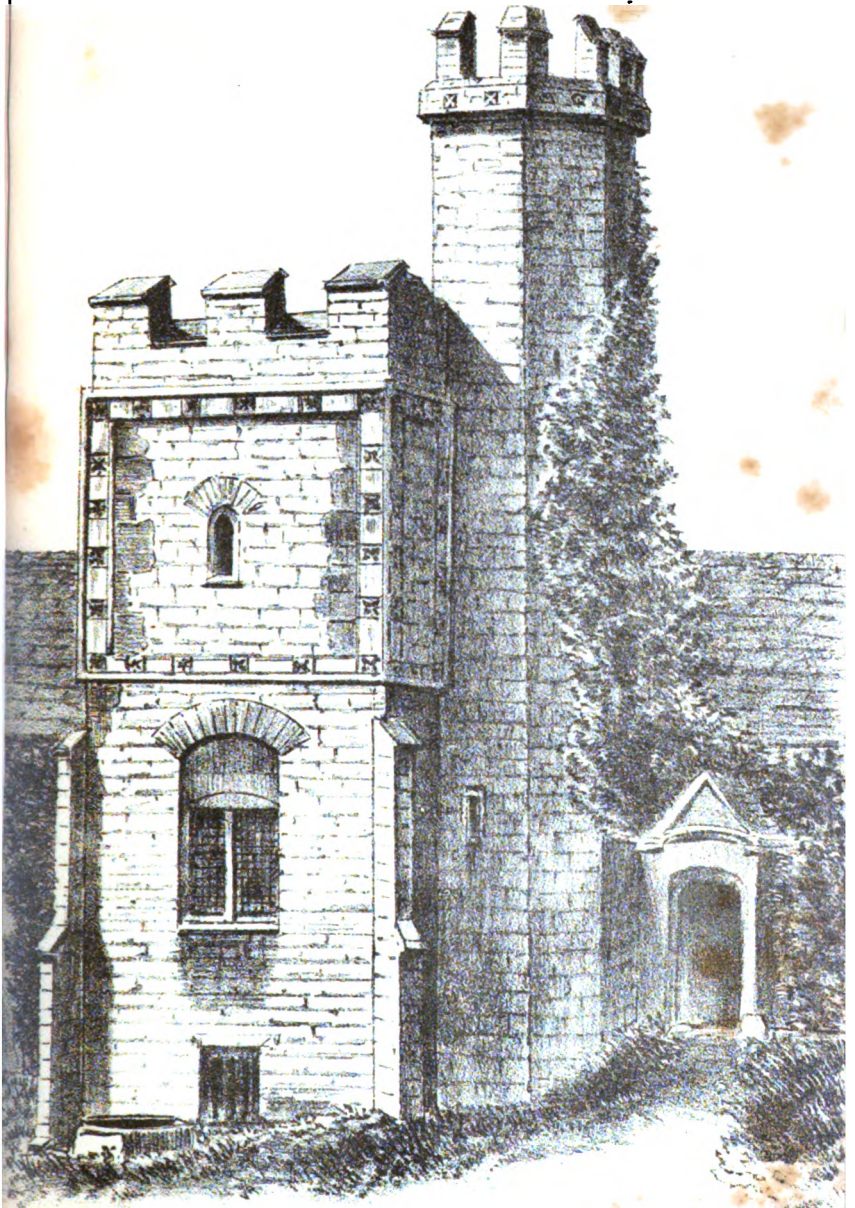


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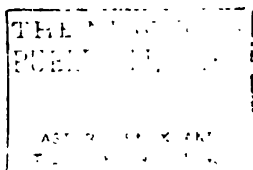


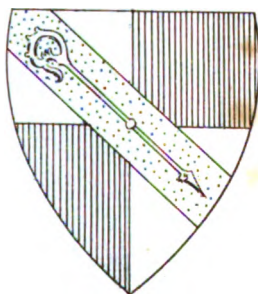
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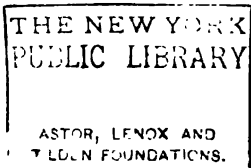


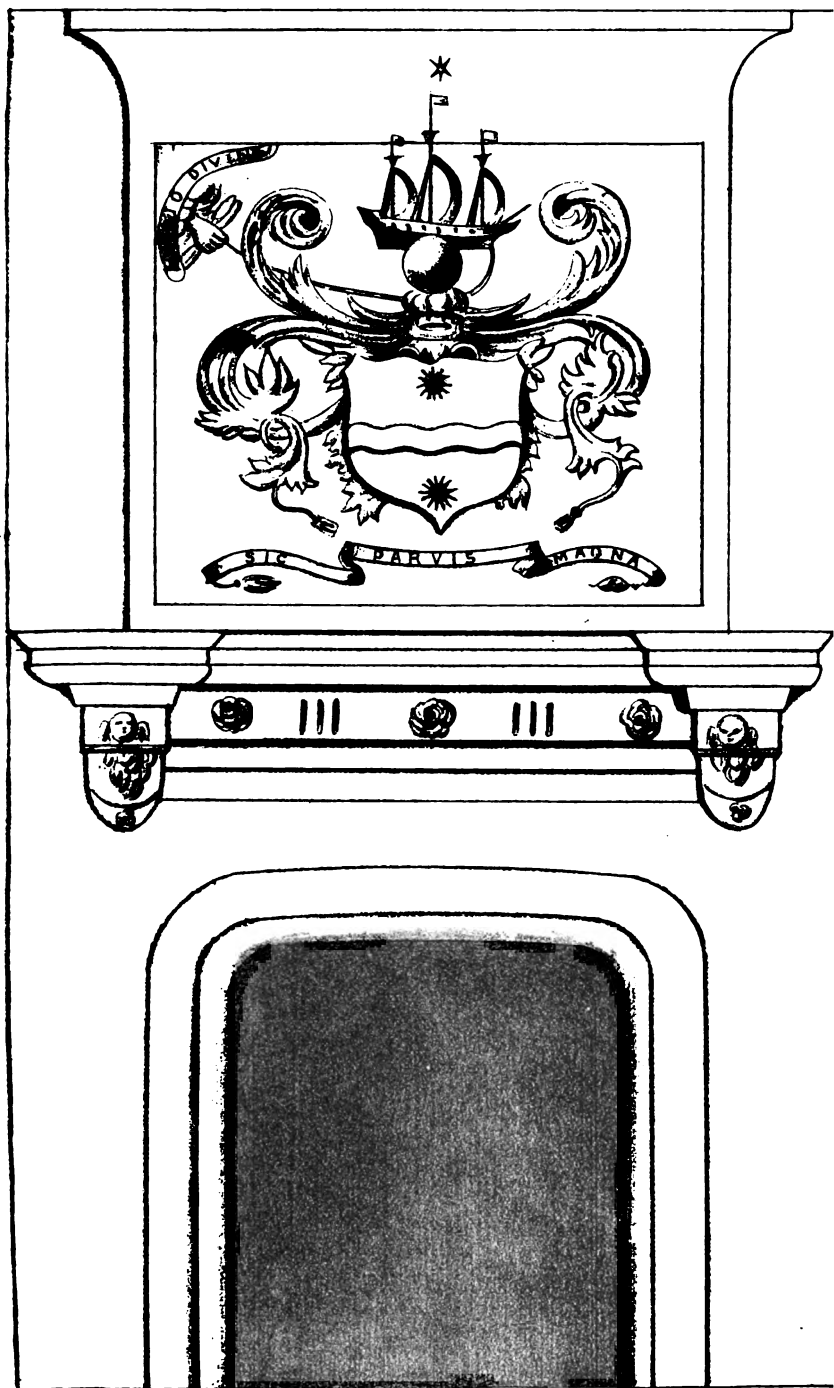
LODGE.





SEALS & ARMS .





CHIMNEY-PIECE ON SECOND-FLOOR OF TOWER.

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NOTES ON THE ANTHRACITE BEDS OF NORTH DEVON.

BY TOWNSHEND M. HALL, F.G.S.

(Read at Torrington, July, 1875.)

I. REMARKS ON ANTHRACITE IN GENERAL.

I PROPOSE in the course of this paper to say, in the first place, a few words as to anthracite in general; and secondly, to give notes, both historical and geological, with reference to its occurrence in North Devon.

Of the three varieties into which coal as a mineral substance can most conveniently be subdivided, anthracite, or culm, as it is frequently called, is the one which may be described as the most highly mineralized and the least bituminous in its nature. Black coal, which forms the ordinary fuel of Great Britain, occupies an intermediate position in the series; whilst brown coal or lignite, approaches very nearly in its chemical composition to the wood found in submerged forests or in the modern peat-beds.

By taking the average of a large number of analyses of these three species of coal, and arranging them according to the amount of carbon, hydrogen, oxygen and nitrogen they contain, it will be found that the following results are afforded:

	Carbon.	Hydrogen.	Oxygen & Nitrogen.	Farthy Matter.
Lignite	68·01	5·90	22·61	3·48
Coal	84·15	6·15	8·00	1·70
Anthracite	94·10	2·39	2·21	1·30

This table shows in a very marked degree what may be termed the growth of lignite into anthracite, the increase in the amount of carbon, and the decrease in that of the gases, alike showing how much both time and local geological agencies have been able to effect towards the complete mineralization of what was once an ordinary woody tissue.

It is almost entirely to the newer rocks, ranging from the miocene down to the oolite, that the occurrence of lignite is confined; and in Italy, Hanover, the Tyrol, Austrian Alps, and Hungary it is extensively worked for the purpose of fuel. On the other hand, true black coal, such as forms the staple produce of our collieries, is almost entirely limited to that division of the palaeozoic series of rocks known as the carboniferous system, and to that branch of it in particular which is designated as the coal measures. Anthracite is not only found abundantly throughout the carboniferous system, but also in still older rocks, such as the Llandeilo flags, in the lower silurian system; though by what means the conversion of coal into anthracite has been effected, whether by a greater amount of local heat, or by a greater pressure from superincumbent rocks, may still be regarded as an open question.

The passage of coal into anthracite over a largely extended area is well known in the case of the South Wales coal-field, where the beds or seams on the eastern side are bituminous in their character, and proceeding westward are changed into anthracite, and that apparently without any violent contortions of the rocks or outbursts of igneous matter to account for it. In a similar manner Professor Hull has shown that in Ireland a line drawn from Galway to Dublin Bay would separate the coal-fields into two groups, the northern portion producing bituminous coal, and the southern producing anthracite. Taking foreign localities, we find that both in Southern Russia and in Pennsylvania the chemical composition of the coal has undergone the same gradual alteration. In the latter instance, however, it is mentioned by Dana and Professor H. Rogers, that where the anthracite occurs the rocks are uplifted and contorted to a considerable extent, so that the seams are not unfrequently exposed to view in the sides of the hills, and their contents may be extracted in most cases by quarrying, instead of by means of pits or shafts.

In the North Devon district the anthracite is found in the millstone grit, a series of beds belonging to the carboniferous formation, but of an age immediately antecedent to that of the true coal measures, and the contortions which the strata has here undergone are too well known to need any description.

II. LITERATURE OF THE NORTH DEVON BEDS.

Although there is no doubt that the anthracite of this county has been known and worked to a very great extent in early times, I have as yet been unable to obtain any

authentic notice of it prior to the year 1790, when the works at Tawstock were said to be "re-opened," having previously been abandoned. From this time, to the date of Sir Henry De la Beche's report in 1839, I propose to give extracts from various authors bearing upon the subject.

POLWHELE, REV. R.—*History of Devonshire*, p. 55 (1797). "In the month of July, 1793, the discovery of 'an excellent coal-mine' at Tawstock, was announced in our provincial papers.* But this 'excellent coal-mine' is at present known by the name of the Tawstock Culmworks.† Culm has been found at a distant period in the parish of Westleigh, near Bideford, and not many years since, near the parsonage-house at Bideford."

VANCOUVER, C.—*General View of the Agriculture of the County of Devon* (1808)—briefly notices a bed of culm or anthracite in the parish of Chittlehampton, varying from four to twelve inches in thickness, which follows the general direction of the strata of grey-wacke in which it is imbedded.

LYSONS, REV. D. AND S.—*Magna Britannia*. Devon. 1822. "Anthracite occurs on the coast near Bideford: it approaches rather to black chalk, as it contains not above 10 per cent. of carbon. (*sic*!) It occurs as a bed in the greywacke formation, in a position nearly vertical, and extends inland for many miles in a straight direction eastward, its thickness varying from two inches to two feet." (Page cclxvi.)

"The anthracite already mentioned, as found near Bideford, is raised in considerable quantities for the purpose of a pigment, and is employed as such in the dockyard at Ply-

* It is with peculiar pleasure we announce to the public, that an excellent coal-mine hath lately been discovered at Tawstock, in Devon, in the grounds belonging to Sir Bouchier Wrey, Bart., several veins having been explored in different directions, the coals of which prove to be extremely good, and burn remarkably clear. This circumstance is likely to turn out highly beneficial to the city, as the line of the intended public canal from Exeter to Barnstaple will run within a few yards of the said coal-mine.

† The proprietors of these works having lately discovered a valuable and extensive vein of culm, fit for the purpose of burning lime, &c., beg leave to inform the public, and particularly the lime-burners, that the same will be sold at the said works at the following reduced prices, &c., to limeburners, if paid for on delivery, or within one month afterwards, 36s. per whey; if paid for at the ensuing Christmas, 38s. per whey; and to every other purchaser of less quantity than a whey, 9d. per bushel, to be paid for on delivery. The works are situated at Hiscott, in the parish of Tawstock, and are seven miles east of Bideford, about six south of Barnstaple, and about two from New Bridge, on the Exeter turnpike-road from Barnstaple.

mouth. . . . Coal is said to have been found in small quantities at Abbotsham, and elsewhere; but culm might have been mistaken for it. Culm has been dug in the parishes of Tawstock, High Heanton, and Chittlehampton. At the two last-mentioned places the works were soon abandoned; but at Tawstock it was procured in great quantities, and of a good quality, about the middle of the last century.

"The works had been given up, and reopened about 1790. They were abandoned about 1800, on account of the water; at that time about 900 bushels a week were procured, the depth of the pit being then about 25 fathoms.

"The culm is found at a depth of about five or six fathoms; the veins, of which there are two, are about nine feet thick, and are supposed to be of great depth." (Page ccxcii.)

DE LA BECHE, SIR H.—*Proc. Geol. Soc.*, vol. ii. p. 106 (1834). "The anthracite beds are 13 miles long, and are cut off by the sea at Greenacliffe; but between Clovelly and Hartland there is a highly carbonaceous slate, which there is but little doubt belongs to the same system, and thus it would be extended about 11 miles still further westward, when the sea again cuts it off."

SEDGWICK AND MURCHISON (1840).—In their memoir *On the Physical Structure of Devonshire*, these authors refer to three beds of culm at Bideford, designated by the names South, Middle, and North Veins. All of these dip to the south.

"The southern or paint vein is three feet in width. It is very impure, and contains little good culm fit for burning. The middle vein is situated 15 fathoms north of the above, and has an average thickness of four feet, though in some places it expands to 20 feet, and in others is pinched in to a few inches. The northern vein is described as varying also in its width, the average being two feet."

DE LA BECHE, SIR H.—*Report on the Geology of Cornwall, Devon, and West Somerset* (1839). "Anthracite, or culm, occurs in a few beds, of very variable thickness, between Greenacliff, on the coast west from Bideford, and Hawkrigde Wood, on the right bank of the Taw, near Chittlehampton, a distance of about twelve miles and a half. These beds, the importance of which has been most remarkably magnified, are generally accompanied by black shales, among some of which are found the abundant remains of plants. The anthracite is mixed with these shales in the manner repre-

sented beneath [Here follows a rough sketch, showing the intercalation of the anthracite with the sandstones and shales]; so that the culm itself seems the result of irregular accumulations of vegetable matter intermingled with mud and sand. As so frequently happens with carbonaceous deposits of this kind, nodules of argillaceous ironstone are often found in the same localities with the shale and anthracite, reminding us of the intermixture of iron ores and vegetable matter in the bogs and morasses of the present day.

"The occurrence of anthracite near Bideford has been long known; and Mr. Greenough, in his *Geological Map of England and Wales*, published in 1819, noticed the fossil plants and clay ironstone near Clovelly, a portion of the series of beds which near Bideford contain anthracite. Between Shebberton Cliff and Cockington Head the beds associated with the anthracite consist of argillaceous shales and slates, intermingled with sandstones, the latter not being so abundant as the former. Notwithstanding the faults by which the strata have been broken on this coast, and the contortions which they have suffered, the shale with vegetable compressions and ironstone nodules on the north side of Cockington Head seems somewhat higher in the series than the anthracite beds of Greenacliff, being perhaps a continuation of the beds that occur at Clovelly, and which are seen contorted from thence in different parts of the coast to Hartland Point.

"The Greenacliff anthracite is continued in an east direction through the town of Bideford, two beds being there observable, which are more fully developed about a mile inland on the right bank of the Torridge. These beds are accompanied by shales, containing numerous fossil plants, on both banks of the Torridge, near Bideford. From Greenacliff to Eastacot a few marked sandstone strata occur not far beneath the anthracite and its associated beds, inclined at a very high angle with the horizon.

"Near Alverdiscot a bed of anthracite has been traced for about a mile from near the church to Woodland Farms. Although contortions might bring up the more northern bed, which runs parallel with it at the distance of nearly three-quarters of a mile, the absence of the marked sandstone beds above noticed would seem to place it in a higher portion of the series. At Hawkridge Wood, on the Taw, the anthracite beds terminate to the eastward; and it would appear that vegetable remains also become more rare in that direction; at least they have been as yet very sparingly detected near Hawkridge Wood.

"It has been somewhat prematurely considered that the plants detected in the range of carbonaceous rocks from Bideford Bay to Hawkridge Wood were all of species well known in the coal measures. Dr. Lindley, who has examined such plants from this run of beds as we were enabled to place before him, informs us that, though the general form of the plants resembles that of the vegetation observed in the coal-measures, many species, and even one genus, were entirely new to him, and were different from any he had noticed among the plants of the coal-measures. Leaves of monocotyledonous plants of three or four species, hitherto undescribed, constitute the great proportion of the vegetation entombed along this carbonaceous range of rocks, and probably contributed most materially to the formation of the anthracite; for we find them most intermingled with that substance.

"The other plants occur much more irregularly, calamites and ferns being intermingled in patches with the principal body of this fossil vegetation. Amid these other plants Dr. Lindley recognised *Pecopteris Serlii* (Ad. Broug.),* *P. lonchitica* (Ad. Broug.), *Neuropteris Loshii* (Ad. Broug.), *Neuropteris heterophylla* (Ad. Broug.), and *Sphenopteris acuta* (Ad. Broug.). Among the calamites there is probably also *C. nodosus*, and one which somewhat resembles *C. Steinhauri*. There were several species, unknown to Dr. Lindley, of the genera *Pecopteris*, *Asterophyllites*, *Sphenophyllum*, *Lepidodendron*, and *Poacites*. Indeed, a large proportion of the mass of plants entombed along this line would appear to belong to species not yet known to occur in the true coal-measures; and probably one half of the same mass is made up of the leaves of plants of which the genera have not been determined. A minor portion consists of species which appear the same as those which have been detected in the coal-measures. (Page 124.). . . . The beds of anthracite which stretch across the country from Barnstaple Bay by Bideford and Alverdiscot towards Chittlehampton would appear to have been long known; indeed it is probable, as the crop of the beds is very readily seen, that these portions were long since worked. Vancouver, in his *Agricultural Survey of Devonshire*, notices a bed varying from four to twelve inches in thickness, near Chittlehampton, probably the bed in Hawkridge Wood, near the Taw. According to Lysons, the culm or anthracite in the parish of Tawstock, perhaps meaning the beds near Eastacot, was extensively worked in the middle of the last century;

* *Sic!* Adolphe Brongniart's *Histoire des Végétaux Fossiles* was published in 1828.

the pit re-opened about 1790, and again abandoned, on account of the water, in 1800, when the depth of the pit is stated to have been 25 fathoms, and the quantity of anthracite thrown up equal to 900 bushels per week.*

"Old pits on the out-crop of the anthracite beds are very common, so that these beds may be easily traced across the country. Making a very considerable angle with the horizon, they have been worked in the manner of lodes or mineral veins. They are very irregular in thickness, and are therefore comparatively expensive to work, except where a fair average thickness can be obtained for some distance. Culm or anthracite mines are now (1838) at work about a mile on the east of Bideford. Mr. John Rundle, M.P., who is interested in them, informs us that for the last year they had not done much there, but that about twelve to eighteen months since they drove a little under the adit, and in a short time obtained from 600 to 700 tons of anthracite. It appears that these mines were partially opened by two parties, about twelve or fifteen years since, for 200 fathoms in length, above an adit 15 fathoms deep.

"The eastern mine, in full work, employed three men and five boys, and produced about 700 bushels, or 58 tons of anthracite per week. From the western mine about 1,500 tons were raised in one year. The middle or great anthracite bed, upon which all the chief workings have been carried on, is described as varying from 6 inches to 14 feet in thickness, the average being about 7 feet. As far as had been heard or seen of this bed, it had everywhere been removed by old workings to the depth of 8 or 10 fathoms, as far probably as could then be conveniently accomplished before the water became too abundant for the common machinery employed.†

"Sufficient anthracite was at one time raised near Greenaclyff, in Barnstaple Bay, to burn with the limestone brought there from South Wales."‡ (Page 513).

III. PRESENT ASPECT OF THE ANTHRACITE BEDS, AND THEIR FOSSIL CONTENTS.

Commencing at the western end of the beds, where they are cut off almost at a right angle by the waters of Barnstaple

* *Magna Britannia*, p. 292.

† Rundle MS.

‡ A variety of the anthracite, probably formed from decomposed portions of it, is raised near Bideford, and employed as a pigment, and, as such, has been employed in our dockyards. Lysons (*Mag. Brit.* p. 292—Devon), states that it was thus used at Plymouth in 1822, and a few years since it was sent to Chatham for the same purpose.

Bay, we find at Greenacliff, between Rock's Nose and Portledge, the outcrop of the beds well exposed.

The widest culmiferous band is nearly 18 feet in width, but several smaller strings of the same material traverse the slates and shales. The adjoining rock is in many places almost vertical, but there are also several anticlinal; whilst the line of strike is also much contorted. A hard quartziferous sandstone, almost approaching a quartzite, occurs near an outcrop of a vein containing iron ore and manganese, and on the south of it are nests or bunches of anthracite, affording good specimens of *Pecopteris*, *Calamites*, and *Lepidodendron*.

At Pitt quarry, in the same parish of Abbotsham, a great variety of characteristic plants are found in the grits adjoining the culm bands.

Still proceeding eastward, at Bideford may be seen, a few yards north of the new railway station, the black shales forming the outcrop of the veins which until a very recent period were worked to a considerable extent.

The ruins of the old engine-house still remain, and a quarry behind it affords fine specimens of fossil plant remains. About a mile east of this spot the present works, consisting of a shaft and level adit, are still carried on for the purpose of obtaining the softer varieties of anthracite, which when ground to a powder are sold as a pigment under the name of "Bideford Black."

From this to Alverdiscott and Hiscott the beds may be traced by the intermittent bands of black shale, along the surface of the soil, and by the numerous old workings, which were probably used about the end of the last and the beginning of the present century. The termination of the beds is seen associated with grits dipping south at a high angle, in a roadside cutting, at the top of the hill above Hawkridge Wood, near the UMBERLEIGH station. Here there are beds of indurated sandstones and grits containing plant remains, but in a bad state of preservation. In the wood between the road and the river Taw, the bed has been extensively worked by means of shafts from the top of the hill, and by adits from the level of the river. The whole length of the beds, as measured on the Ordnance map, is twelve and a half miles.

The chief localities for the fossils are at present confined to the western end, especially in the parishes of Bideford and Abbotsham. Professor Hull, in his work on the coal-fields of Great Britain, gives the number of plants found in the North Devon culm beds as 23, though on what authority he does not mention. The following list is compiled from the series

of fossils in my own collection, which was examined last year by Mr. Carruthers, of the British Museum, who was the first to detect amongst the specimens from Abbotsham, one showing the fruit of the calamite, the only one, I believe, hitherto found in this district; also I have included the older lists taken from the publications of Sedgwick, Murchison, and De la Beche. It may be noticed that the late Professor Phillips, in his otherwise exhaustive work on the Palæozoic Fossils of Devon and Cornwall, omitted to describe or figure any of the fossil plants.

It is perhaps scarcely necessary to add, that in the department of fossil botany the tendency of modern investigators is, if possible, to reduce rather than to extend the number of species, and that many of the fossils which were formerly thought to represent plants widely differing from each other even in genera, are now proved to have belonged to parts of the same plant, such as the internal pith, stem, roots, rootlets, or leaves; and I trust that a comparison of these will enable me on a future occasion to offer some further observations on our North Devon plant remains.

List of fossil plants from the North Devon culm beds:

<i>Asterophyllites foliosa.</i>	<i>Neuropteris gigantea.</i>
" <i>galioides.</i>	" <i>heterophylla.</i>
" <i>longifolia.</i>	" <i>Loshii.</i>
<i>Bowmanites</i> (fruit of calamite).	<i>Pecopteris lonchitica.</i>
<i>Calamites arenaceus?</i>	" <i>muricata.</i>
" <i>cannæformis.</i>	" <i>Serlii.</i>
" <i>nodosus?</i>	<i>Poacites cocoina.</i>
" <i>Steinhaurii?</i>	<i>Sigillaria.</i>
" <i>undulatus.</i>	<i>Sphenopteris acuta.</i>
<i>Cyperites bicarinata.</i>	" <i>latifolia.</i>
<i>Lepidodendron.</i>	<i>Sphenophyllum</i> sp (?)
<i>Lepidophyllum intermedium.</i>	<i>Sternbergia.</i>
<i>Neuropteris cordata.</i>	<i>Stigmaria ficoidea.</i>

A single shell of the genus *Anthracosia* has also been found near Bideford.

DEVONSHIRE GLEANINGS FROM "MANNINGHAM'S DIARY."

BY W. PENGELLY, F.R.S., F.G.S., ETC.

(Read at Torrington, July, 1875.)

[* WHEN the late Sir Wm. Tite became President of the Camden Society, he caused the "Diary of John Manningham, of the Middle Temple, and of Bradbourne, Kent, Barrister-at-Law, 1602-1603," to be printed, from the original Manuscript in the British Museum, and presented to the Society. A few copies were presented to persons not members of the Camden Society, and it was my good fortune to receive one of them.

Whilst perusing the volume, I have from time to time made notes and memoranda respecting certain passages, especially such as were connected with Devonshire. The present communication consists merely of such *Devonshire Gleanings*; and is offered to the Association in the belief that it might with advantage find a place in our *Transactions*, especially as the "Diary" has never been published. These gleanings are exclusively biographical, and are brief notices of, or allusions to, the following distinguished natives of this county, each of whom has a place amongst "Prince's Worthies":—Sir Thomas Bodley, Sir John Dodderidge, Sir John Glanvil, John Harris, Sir John Heale, Richard Hooker, Sir William Peryam, and Sir Walter Raleigh].

I. [SIR THOMAS BODLEY. Born at Exeter, 2nd March, 1544, died in London, 28th January, 1612.

The "Diary" contains two entries respecting the famous Exonian whose name is borne by the Bodleian library at Oxford, and of whom a biographical notice, prepared by the late Sir John Bowring, appears in our 5th volume. They are as follow]:—

"Mr. Bodly, the author, promoter, [and] the perfecter, of a goodly library in Oxford, wan a riche widdowe by this

• [Everything within brackets is editorial; all else is from the "Diary."]

meanes. Comming to the place where the widdowe was with one whoe is reported to have bin sure of hir, as occasion happened the widdowe was absent; while he was in game, he, finding this opportunity, entreated the surmised assured gent. to hold his cardes till he returned. In which tyme he found the widdowe in a garden, courted, and obtained his desyre; soe he played his game, while an other held his cardes. He was at first but the sonne of a merchant, vntill he gave some intelligence of moment to the counsell, whereupon he was thought worthie employment, whereby he rose." p. 63.

[Again]:—"Mr. Bodley which hath made the famous library at Oxford was the sonne of a merchant of London: was sometymes a factor for the state: after married a riche widdowe in Devonshire or Cornewall, whose husband grewe to a greate quantity of wealth in a short space, specially by trading for pilchers; nowe himself having noe children lives a pleasing privat life, somewhile at the City, somewhile at the University; he followd the Earl of Essex till his fall." (p. 129.)

[The chief noteworthy points in the foregoing entries are those relating, 1. To Sir Thomas Bodley's father; 2. To his wife; 3. His mode of winning his wife; 4. His employment as a diplomatist; and 5. His connexion with the Earl of Essex.

1. According to Manningham, Bodley "was at first but the sonne of a merchant of London." I have failed, however, to gather from any of the biographers of Sir Thomas that the father was ever engaged in merchandise. Sir T. Bodley himself, in "that history of his life, written by himself," which Prince quotes "in his own excellent words," says "I was born at Exeter in Devon, the 2d of March, in the year 1544, descended by father and mother, of worshipful parentage; by my father, from an antient family of Bodley, of Bodleigh, of Dunscomb by Crediton; and by my mother, from Robert Hone, Esq.; of Ottery St. Mary, nine miles from Exon.

"My father, in the time of Q. Mary, being noted and known to be an enemy to popery, was so cruelly threatned, and so narrowly observed, by those that maliced his religion, that for the safeguard of himself and my mother, (who was wholly affected as my father) he knew no way so secure, as to fly into Germany; where, after he had been awhile, he found means to call over my mother, with all his children and family; whom he settled for a time in Wesell, in Clealand,

(for there, as then, were many English, which had left their country for their conscience, and with quietness enjoyed their meetings and preachings) and from thence we removed to the town of Frankford, where was in like sort, another English congregation.

"Howbeit, we made no long tarriance in either of these towns, for that my father had resolved to fix his abode in the city of Geneva; where, as far as I remember, the English church consisted of some hundred persons. I was at that time of twelve years of age, but through my father's cost and care, sufficiently instructed to become an auditor, of Chevalerius in Hebrew, of Beraldus in Greek, of Calvin and Beza in Divinity, and of some other professors in that university, which was then newly erected: Besides my domestical teachers in the house of Philibertus Saracenus, a famous physician in that city, with whom I was boarded, where Robertus Constantinus, that made the Greek Lexicon, read Homer unto me.

"Thus I remained there two years and more, until such time as our nation was advertised of the death of Q. Mary, and succession of Q. Elizabeth, with the change of religion; which caused my father to hasten into England, where he came with my mother, and all the family within the first of the Queen; and settled their dwelling in the city of London." ("Worthies of Devon," p. 92.)

The life of Sir T. Bodley is followed in Prince by those of his two brothers, Lawrence Bodley, D.D. (pp. 101-2), and Sir Josias Bodley, Kt. (pp. 102-5), but they are each and all silent respecting the father's profession.

Nevertheless Manningham was correct; the father was a London merchant, as is satisfactorily, though incidentally, proved by Prince, in his biographical sketch of Zachary Bogan, M.A. (pp. 106-9). This sketch concludes with the following paragraph:—"In the North isle of the parish church of Totnes, is a large marble grave-stone, on which were sometime found, inlayed with brass, the effigies of this gentleman's grandfather and grandmother; one of which is torn off: but underneath is still remaining a label of brass, containing these words:

Here lyeth the Body of Walter Bougins,
Of Totnes, merchant, who had to wife, Pro-
thasy the eldest daughter of John Bodley
of London, merchant, by whom he had issue
six sons, and five daughters; and departed
this life in the fifteenth day of April,
A.D. 1591." (p. 109.)

On the "Prothasy" of this epitaph, Prince has the following note:—"She was sister to the great Sir Thomas Bodley."

2. With respect to Sir T. Bodley's wife, Manningham's statements are to the effect that she was a rich widow of Devonshire or Cornwall, whose first husband had grown rich mainly by trading in pilchards. According to Mr. R. Dymond, the lady was Ann, widow of Nicholas Ball, of Totnes, and daughter of Cary [or, as some say, Carew] of Bristol.* His acquaintance with the lady may perhaps have commenced through his eldest sister, Prothosay, wife of Walter Bougins, also a merchant of Totnes, as stated by Prince. Manningham appears to be the only writer who mentions that the first husband made his money in the pilchard trade, or (3), the diplomatic trick by which Sir Thomas secured the lady.

4. According to Manningham, Bodley "gave some intelligence of moment to the counsell, whereupon he was thought worthie employment, whereby he rose." The following is briefly Bodley's own statement respecting himself after returning from Geneva, in the first year of Queen Elizabeth:—"I was sent . . . to . . . the university of Oxford. . . . There . . . I took the degree of Batchelour of Art, . . . in the year 1563. Within which year I was chosen probationer of Merton college; and the next year ensuing, admitted fellow. . . . In the year 1565. . . . I undertook the publick reading of a Greek lecture in the same college-hall. . . . In the year . . . 1566, I proceeded Master of Arts, and read for that year, in the school-streets, Natural Philosophy. After which, within less than three years space, I was won . . . to stand for the proctorship, to which I, and . . . Mr. Bearblock of Exeter-college, were quietly elected in the year 1569. . . . After this for a long time, I supplied the place of university orator: and bestowed my time in the study of sundry faculties, without any inclination to profess any one above the rest: Insomuch, as at last, I waxed desirous to travel beyond the seas, for the attaining to the knowledg of some special modern tongues; and for my increase of experience in managing affairs, being wholly then addicted to employ myself, and all my affairs, in the publick service of the state. My resolution fully taken, I departed out of England, A. 1576, and continued abroad very near four years, and that in sundry parts of Italy, France, and Germany. A good while after my return, I was employed

* *Trans. Devon. Assoc.*, 1872, vol. v. p. 331.

by the Queen to Frederick, father to the present King of Denmark, to Julius, Duke of Brunswick, to William Lantgrave of Hess, and other German Princes. The effect of my message was, to draw them to joyn their forces with hers, for giving assistance to the King of Navar, now Hen. 4th, of France. My next employment was to Hen. 3d, at such time as he was enforced by the Duke of Guise to fly out of Paris: Which I performed in such manner as I had in charge, with extraordinary secrecy; not being accompanied with any one servant, (for so much was I commanded) nor with any other letters than such as were written with the Queen's own hand to the King, and some selected persons about him: The effect of that message it is fit that I should conceal; but it tended to the good not only of the King, but all the protestants in France, and the duke's apparent overthrow. It so befel after this, in the year —88, that for the better conduct of her majesty's affairs in the provinces united, I was thought a fit person to reside in those parts, and was sent hereupon to the Hague in Holland." ("Worthies of Devon." pp. 92–3.)

5. "Bodley," says Manningham, "followed the Earl of Essex till his fall." The following, however, is his own account of his connexion with the Earl: "From the very first day I had none more my friend, among the lords of the council, than was the lord treasurer Burleigh. For when any occasion had been offered to declare his conceipt, as touching my service, he would always tell the Queen, (which I received from herself, and some other ear-witnesses) that there was not any man in England so meet as myself, to undergo the secretary's office. And since, his son, the present lord treasurer, hath signified unto me, in private conference, that when his father first intended to advance him to that place, his purpose was withal to make me his colleague. But the case stood thus on my behalf: Before such time as I returned from the Provinces United, which was in the year 1597, and likewise after my return, the Earl then of Essex, did use me so kindly, both by messages and letters, and other great tokens of his inward favour to me; that although I had no meaning but to settle in my mind my chief dependance on my Lord Burleigh, as one that I reputed best able, and therewithal most willing, to work my advancement with the Queen: Yet I know not how, the earl, who sought by all devices to divert her love and liking, both from the father and the son, but from the son in special, to withdraw my

affections from the one and the other, and to win me to depend altogether upon himself, did so often take occasion to entertain the Queen with some prodigal speeches of my sufficiency for a secretary, which were ever accompanied with words of disgrace against the present lord treasurer, as neither she, of whose favour before I was throughly assured, took any great pleasure to prefer me the sooner, for she hated his ambition, and would give little countenance to any of his followers, and both the lord treasurer and his son waxed jealous of my courses; as if, underhand, I had been induced, by the cunning and kindness of the Earl of Essex, to oppose myself against their dealings. And tho' in truth they had no solid ground at all of the least alteration in my disposition, towards either of them both, (for I did greatly respect their persons and places, with a settled resolution to do them any service, as also I detested in my heart to be held of any faction whatsoever) yet the now lord treasurer, upon occasion of some talk I have since had with him, of the earl and his actions, hath freely confessed of his own accord to me, that his daily provocations were so bitter and sharp, and his comparisons so odious, when he put us in a ballance, as he thought thereupon, he had very good reason, to use his best means to put any man out of hope of raising his fortune, whom the earl, with such violence, to his extream prejudice, had endeavoured to dignify: And this, as he affirmed, was all the motive he had to set himself against me, in whatsoever might redound to the bettering of my estate, or encreasing my credit and countenance with the Queen. When I had thoroughly bethought myself, first in the earl, of the slender holdfast he had in the Queen's favour, and of an endless opposition of the chiefest of our statesmen, like still to wait upon him; of his perilous, feeble, and uncertain advice, as well in his own, as in cases of all his friends; and moreover, when I had considered, how very untowardly these two counsellors stood affected unto me, (upon whom, in cogitation, I had framed all my future prosperity) how ill it did concur with my nature, to become or be accounted a stickler or partaker in public faction, how well I was able (by God's blessing) to live of myself, if I could be content with a competent livelihood, how short a time of future life I was to expect, by common course of nature; when I had, I say, in this manner, represented to my thoughts my particular estate, together with the earls, I resolved thereupon to possess my soul in peace all the residue of my days; to take my full farewell of state employments; to satisfy my mind with that

mediocrity of worldly living that I have of mine own, and so to retire me from the court, which was the epilogue, and end of all my actions and endeavours, of any important note, till I came to the age of fifty-three years." ("Worthies of Devon." pp. 94-5.)]

II. [SIR JOHN DODDERIDGE, Judge of the Court of King's Bench. Born at Barnstaple [?] or Southmolton [?] in 1555, and died at Egham in Surrey, 13th September, 1628. The following is the only mention respecting him]:—

"(16 October, 1602). When Mr. Dodridge, in his argument of Mr. Darsies patentes, and soe of the prerogative in generall, he began his speache from Gods gouvernement. 'It is done like a good archer,' quoth Fr. Bacon, 'he shoots a fayre compassé.'" (p. 62, 63.)

[Mr. Bruce has the following note on this entry]:—"This anecdote derives some little *vraisemblance* from the circumstance that Sir John Doderidge, who was a justice of the King's Bench from 1612 to 1628, was looked upon as a man of a philosophical character of mind, and of very large acquirements. Fuller remarks that it was hard to say whether 'he was better artist, divine, civil or common lawyer' (Worthies, I. 282), and Croke, that he was a 'man of great knowledge as well in common law as in other human sciences and divinity.' (Reports, Car. 127, cited in Foss's Judges, VI. 309)."

III. [SIR JOHN GLANVIL, Justice of the Common Pleas. Born at Tavistock, but in what year appears to be unknown, and died at Tavistock, 27th July, 1600. The following is the only entry respecting this Devonian]:—

"Justice Glandville upon a tyme, when fidlers pressed to play before him, made them sing alsoe, and then askt them yf they could not cry too; they said his worship was a merry man; but he made them sad fellowes, for he caused them to be vsed like rogues as they were." (p. 117.)

[Mr. Bruce makes the following note on Justice Glanvil]:—"Justice of the Common Pleas, 1598-1600. (Foss's Judges, V. 494.)"

IV. [JOHN HARRIS, Serjeant-at-Law. Born near Lifton (but in what year seems to be not known), and died probably in or about 1548. He was interred in Lifton Church. This gentleman's name occurs in the following entries]:—

"This day Serjeant Harris was retayned for the plaintife, and he argued for the defendant; soe negligent that he knowes not for whom he speakes." (p. 41.)

"Serjeant Harris, standing on [? one] day at the common place barr with the other serjeants, and hauing scarce clients enough to hold motion,—'They talke of a call of sergeants,' said he, 'but for ought I can see wee had more need of a call of clients,'" (p. 92.)

"1. Feb. 1602. There were 11 Sergeants-at-lawe called this day; two of the Middle Temple, Mr. Phillips and Mr. Nicholes; five of the Inner Temple, Crooke the Recorder of London, Tanfield, Coventry, Foster, and Barker; three of Lyncoln's Inn, Harris and Houghton; one of Grayes Inn, Mr. Altam.

When the Queene was moved to have called another to have made up twelve, she refused, saying she feared yf there were twelve there would be one false brother amongst them.

Serjeant Harris when he heard that Barker was called, 'It is well,' said he, 'there should be one Barker amongst soe manie byters.'" p. 117.

"It is said Mr. Snig offers 800*l.* to be Serjeant, whereupon Mr. Serjeant Harris said that he doubted not he should shortly salut his deare brother Mr. Snig.

"Argent makes Sargent." p. 118.

V. [SIR JOHN HEALE, Serjeant-at-Law. Died 4th June in the 66th year of his age. He was buried in Wemberry Church. Mr. Serjeant Heale appears in the following entry only]:—

"Serjeant Heale, since he became the Queens Serjeant, came to the Lord Keeper, desyring that he would heareafter give him more gracious hearinge; otherwise, his clients already beginning to fall from him, he would nowe betake himself to his ease in the country, and leave this troublesome kinde of lyfe. The Lord Keeper made him no other answer but said, yf that were his resolucion he doubted not but the blessing of Issakar would light upon him. *Vide* Gen. xlix. 14: 'Issachar shall be a strong asse couching downe betweene two burdens; and he shall see that rest is good; and that the land is pleasaunt, and he shall bowe his shoulders to beare, and he shal be subiect unto tribute.'" pp. 36-7.

[Mr. Bruce remarks] "Serjeant Hele was one of the legal butts of the time. (See Foss's Judges, VI. 141; Egerton Papers, pp. 315, 391, 399.)"

[Prince says "Serjeant Hele was a person not only of exact skill and judgment in the nicest points of the law, but of great integrity and faithfulness to his client: However he could not escape, in his time, the envy of the world, which

follows vertue as close as the shadow doth the body ; if therefore some have endeavoured to load his memory with any undecent or uncharitable reflections, that of Solomon may excuse him, 'Who can stand before envy ?' ("Worthies of Devon," p. 486.)]

VI. [RICHARD HOOKER, Master of the Temple. Born at Heavitree, or Exeter, about 1553, and died near London 2nd November, 1600, aged 46. The following is the only mention of Hooker] :—

"Dr. Couels booke which he wrote as an appology of Mr. Hooker may be sayd to be all heaven, butt yett Mr. Hookers sentences and discourses intermixed are the stars and constellations, the speciall ornaments of it." p. 138.

[Mr. Bruce adds the following note] :—"A just and temperate Defence of the Five Books of Ecclesiastical Polity written by Mr. Richard Hooker, against an uncharitable Letter of certain English Protestants. . . . By William Couel D.D. Lond. 4to. 1603, reprinted in the Works of Hooker, edited by Hanbury. Lond. 1830, ii. 449."

VII. [SIR WILLIAM PERIAM, Lord Chief Baron of the Exchequer. Born at Exeter 1534, died at Fulford 9th October, 1604, in his 70th year. He was buried at Crediton. Sir William Peryam's name occurs in two entries] :—

"My chamberfellow told me of Mr. Long's opposition against him, and howe he had ouermatcht him ; told me of his owne preferment to Sir Robert Cecile by the Lord Chief Baron Periams and Lord Chief Justice Pophams meanes, almost without his own suite. By Sir Roberts fauor he obtayned the cancelling of an obligation wherein his father stooode bound to Auditor Tucke not to vse that office or receive the profits for a certain tyme." p. 41.

"In the Chequer, Mr. Croke, the Recorder of London, standing at the barre betweene the twoe Maiors, the succeeding on his right hand, and the resigning on his left, made a speache after his fashion, wherein first he exhorted the magistrates to good deserts in regard of the prayse or shame that attends such men for their tyme well or ill employed ; then he remembered manie hir Majesties fauors to the Citie, their greate and beneficiall priuiledges, their ornaments and ensignes of autoritie, their choise out of their owne Companies, &c. 'Great, and exceeding great,' said hee, 'is hir Majesties goodnes to this City,' for which he remembered their humble due thankfulness ; next he briefly commended the resigning

Sir Jo. Jarrett, saying that his owne performances were speaking witnesses for him, and the succeeding, for the good hope, &c.: and then, showing howe the maior, Mr. Lee, had bin chosen by the free and generall assent of the Cytie, he presented him to that honourable Court, praying their accustomed allowaunce.

The Lord Chief Baron Periam comended the Recorders speache, and recommend hir Majesties singular benefites to their thankfull consideracions, admonished that their might be some monethly strict searche be made in the Cytie for idle persons and maisterles men, whereof there were, as he said, at this tyme 30,000 in London; theise ought to be found out and well punished, for they are the very scumme of England, and the sinke of iniquitie, &c." pp. 72-3.

VIII. [SIR WALTER RALEIGH. Born at Hayes, beheaded in Old Palace Yard, Westminster, 29th October, 1618. The name of Sir W. Raleigh occurs in the following entries]:—

"A lewde fellowe coming before Sir W. Rawley to be examined concerninge some wrecke which he had gotten into his handes, and being demaunded whether he would sweare to such articles as they would propound, answered that he would sweare to anie thinge they would aske him, and then being admonished he should not be soe rashe in soe serious a matter as concerned his soule soe nearely, 'Fayth,' said he, 'I had rather trust God with my soule, then you with my goods.' (Ch[arles] Da[uers])." pp. 33-4.

"Sir Walter Rhaleighs sollicitor, on [? one] Sheborough, was verry malapert and saucy in speache to Justice Walmesley at the bench in the Common place; soe far that, after words past hotly betwixt them, he said he thought it fitt to commit him for his contemptuous behauiour, but the other judges were mum. *Quantus ille!* His wordes, 'Before God, you do not well to lay their practises vpon us. You knowe me well enough. If you list, &c.'" pp. 58-9.

"Sir Wa. Rawley made this rime upon the name of a gallant, one Mr. Noel,

The word of deniall, and the letter of fifty,
Makes the gent. name that will never be thrifty (*Nos. L.*)

and Noels answerd,

The foe to the stommacke, and the word of disgrace,
Shewes the gent. name with the bold face (*Raw. Ly.*)" p. 109.

"I heard there had bin a foule jarr betwixt Sir Robert Cecile and the Lord Cobham, upon this occasion, because the

Lords and late Counsell, upon the Queenes death, had thought good to appoint another Captaine of the gard, because Sir Walter Rhaley was then absent, which the Lord Cobham tooke in foule dudgeon, as yf it had been the devise of Sir Robert, and would have been himself deputy to Sir Walter rather [than] any other. The Lord Cobham likewise at subscribing to the proclamacion tooke exception against the Earl of Clanricard, *inepte, intempestive*, but he is nowe gone to the King, they say." p. 160.

"It is a common bruit, yet false, that Sir Walter Rhaly is out of his Captainship of the Guard; *facile quod velint credunt, quod credunt loquuntur*."

"Sir Amias Preston, an auncient Knight, sent a challenge a while since to Sir Wa. Ra. which was not aunswered. Sir Ferdinand Gorge is out with him, as some say." p. 171.

[Mr. Bruce makes the following note on this last entry]:—"Raleigh on his trial alludes incidentally to Sir Amias Preston's challenge. Speaking of a book against the title of King James to succeed to Elizabeth, which Cobham had stated that 'he had' from Raleigh,—'I never gave it him,' answered Raleigh, 'he took it off my table. For I remember a little before that time I received a challenge from Sir Amias Preston, and, for that I did not intend to answer it, I resolved to leave my estate settled, therefore laid out all my loose papers, amongst which was this book.' (State Trials, ii. 21.) As to the relations between Sir Walter and Sir Ferdinando Gorges, see *Archæologia*, vol. xxxiii. p. 241." p. 171.

THE NATURAL HISTORY OF EUGLENA VIRIDIS.

BY E. PARFITT.

(Read at Torrington, July, 1875.)

ON May the 5th, 1871, I began a series of observations on *Euglena viridis*. I collected some specimens from a stable drain, the water of which was highly charged with organic matter, so much so that it was almost black: it is in such places as this that this euglena flourishes. I placed the specimens removed, some into a tumbler of water, and some into a watch-glass of water, in my room in front of the window. The water into which they were put contained no organic matter, so far as I could see; the change was therefore very great for them to be taken from comparative luxury and then to be placed on very short commons. The reason for removing them into clear water was to enable me to see them clearly, and so watch their habits and transformations, which I could not do in the dark-coloured liquid.

The specimens obtained were in various stages of development; some full-grown, others with the head or tail developed, and the rest of the creature forming a sort of a ball flattened or depressed at either end, with the head or tail, or both, projecting from these depressions. (See figure 2.)

But before I begin to describe the various transformations this animal plant or phytozoon undergoes, I may state that it has been shifted from one kingdom to the other, or from the vegetable to the animal, and back again, several times, by each of the writers in accordance with their impressions of the place it ought to occupy in the organic world; and it will be seen in the course of our investigations that it is

no wonder that it should have been so ; for it spends part of its time as a vegetable, and the other part as an animal, that is to say, according to our definition of an animal and a vegetable organism ; but to point out the precise place where the one begins, and the other leaves off, I think would be impossible. If we take the animal form when it has arrived at its highest point of development, so far as we know it, that is to say when it is free to move about, and the mouth, and flagellum, and more especially the contractile vesicle, is fully developed, it is then I should pronounce it to be an animal ; we will then call this the positive pole of its existence.

At the other end, or negative pole, we have its vegetable existence, where, from all the vegetative characters, its conjugation and reproduction would render this, as compared with the desmidia and diatomacea, and many other forms of really recognised algæ, quite as positive as we saw it in the animal at the other extremity. There is another peculiarity in this organism, which is that when it has arrived at its highest state of development as an animal, it then contains the basis of its vegetable nature. The animal is composed of two sacs, one inserted within the other ; the inner sac contains all that seems to pertain to the animal, and *between* these two sacs are crowded a great number of spherical cells varying much in size. These cells are again crowded with smaller ones, and so on as far as the eye can see or that our instruments will assist us. These cells are coloured when in the full-grown animal, as also in the various stages below this, of a dull olive-green colour. So that this creature combines two natures (if two natures there be), the vegetable and animal in one.

These green cells are regarded by Ehrenberg and Pritchard as ovæ. To a certain extent they are so, as they are the only means known for the propagation of the species, and physiologically the segmentation of a true ovum may be placed on a par with this ; but I think we cannot press this assertion any further in this direction. If so we shall be bound to take in half the lower forms of vegetable life. Besides, no ovæ, so far as I am aware, are known to conjugate, after which segmentation takes place ; the very act of conjugation would, I consider, be sufficient to show that they are something more than mere eggs.

The inner sac mentioned above is composed of either pentagonal or hexagonal cells, I could not determine which ; and inside this, and at the posterior extremity (not the

anterior, as described and figured by Claparede and Lachmann, plate xii. figure 14), is an elliptical vesicle, called the contractile vesicle. This vesicle is transparent, and traversed longitudinally with several broad elastic bands or muscles, which cause this vessel to contract or elongate at the will of the animal. A contracting vesicle is found in allied genera, such as *Plasconia truncata*, and in *Keronia*; and in both these genera it is situated near the posterior, not far from the ventral orifice. (See Carter in *Ann. Nat. Hist.* 1859. Plate vi. figures 1-2.)

Messrs. Claparede and Lachmann say: "In the species of *Euglenes*, belonging to whom we have observed the existence of the contractile vesicle, namely, *Euglena viridis* (plate xii. figure 14), *E. acis* (figure 15), and *E. pleurotonectes*, this vesicle is found placed precisely on the said ganglion." Professor Ehrenberg believed the white spot or space in which the crimson eye is situated to be a ganglion, or nerve-centre; but the authors above quoted do not fall in with this view; and I may say that I agree with them. In the imperfectly-developed animal, when it is in the spherical condition, before it really assumes the animal form at all, this spot may be detected; and as both the head and the tail are free from colouring matter, I can see no reason for regarding these white spots as nerve-centres. I can see nothing like nerves, or bundles of nerves, with the best appliances at my command.

The discovery of the contractile vesicle in the *Volvox*, the *Gonium*, the *Chlamydomones*, and the *Dinobryons*, &c., inclines Messrs. Claparede to consider these organisms as more related to animals than to vegetables; but M. Cohn will only see in it a proof that the contractile vesicle may exist also among plants.

The truth is, we seem to be here on the border-land of the two kingdoms, the vegetable and the animal; for if this organism does not combine the vegetable life when at its highest point of *apparent* divergence from it, it certainly does put on the entire vegetable form when at its lowest. But I feel convinced in my own mind that it always possesses a double nature, even when at its lowest stage of vegetable existence. It must contain, although not to be discovered by any test that can be applied to it, some animal-initial matter. Mr. Carter, in *Ann. Nat. Hist.*, 1859, p. 17, says the true *Euglenas* evidently belong to the vegetable kingdom." For my own part, I do not see that it is so "evident," but even far from evident, when we take into consideration the

whole history of this organism. At its negative pole, or vegetable end of its existence, and seen in this stage only, one would pronounce it to be vegetable, and nearly related to, if not identical with, the desmidia; but when we come to trace the organism through all its phases, the apparently vegetable nature gradually gives place to a recognised animal. Some very startling facts, or at least very strong assertions, have been made by several writers and investigators into these lower forms of life, as quoted by Mr. A. Wallace in *Nature*, vol. vi. p. 302. In reviewing Dr. Bastian's work, *The Beginnings of Life*, he says: "We next come to the consideration of true heterogenesis among lower organisms. Dr. Braxton Hicks has observed the production of Amœbæ by the transformation of the chlorophyle and protoplasmic contents of the cells of moss radicles. Mr. H. I. Carter has closely followed the changes occurring in the cells of *Nitella*, one of the Characeæ, resulting in the formation of monads and Amœbæ. . . . But we must pass on to still more remarkable facts. The cell contents of confervæ give rise to *Euglenæ* and *Altasiaæ*, beautiful green organisms which abound in stagnant water, and these undergo transformations into a variety of higher or lower organisms, such as Diatoms, Amœbæ, and ciliated infusoria. . . . The low euglenas are transformed into either rotifers, tardigrades, or nematoids; the latter even grew into well-developed males and females." It must be acknowledged that these are very extraordinary facts; but I am quite certain of this, that my friend Carter would not assert what he has done without he was perfectly convinced in his own mind of what he saw. At the same time there is another side to this, so far as the amœbæes and the euglenas are concerned, to which I would now draw attention.

In the course of my investigation of this englena, after they had been in the glass vessel some time, I observed that the whole of the bottom of the vessel was more or less covered with amœbæes: they were very active, but very small. This would seem to bear out the statement of Dr. Braxton Hicks and Mr. Carter; but I am not convinced of this myself; when we come to consider that the most minute portion of an amœbæ will propagate and perpetuate its like, and that the least bit, or even an entire specimen, might adhere to one of the euglenas when transported from the ditch and not be detected; or they might be in the water in which the euglenas were placed. At the same time I see no great difficulty in believing that amœbæes can live, and prob-

ably do live, in some of the larger cells of plants, and particularly those of fresh-water algæ, and more especially as we know that they live in our own veins, or what are by some believed to be the same. This would also apply to the *Navicula viridis* being found in the experimental vessels; for in the course of my experiments with the euglena I wanted to see if I could induce some of them to transform into something else. I inserted a lump of clay into the centre of the vessel, leaving the top just above the water. I placed some of the euglenas on the edge of the water on the clay, and in a few days I had a fine batch of *Navicula viridis*. I had not before seen a single example of this or any other species of navicula in the vessel. Although this would seem to confirm the statement as above given, I could not venture to assert that not a fragment of, or even a very minute navicule, did not exist on any of the euglenas.

Now as to the cell contents of confervas giving rise to euglenas, this could not have been the case where this *Euglena viridis* was found; for the drain is so shallow that the stable liquid barely covers the mud; and besides, so far as I know the habits of confervæ, they will not live in water highly charged with organic matter, so much so that it is the colour of porter; and it is in such places as this that this species of euglena flourishes most, by reason that it subsists on what is held in suspension in the liquid.

There is, I think, yet stronger evidence of the navicules not being metamorphosed euglenas; for of the great numbers of the latter that I have examined, I have never seen one in a transition state so as to warrant such an assertion.

There is another point in which this euglena simulates (if I may be allowed such an expression) the desmidia and diatomacea in the act of conjugation—whether the cells be large or small, it does not matter, or at which stage of their growth, so that the mass or group of cells have not taken upon them the crimson eye-spots. Every cell or cellule, so far as I could observe, is liable to be brought into contact with a similar cell or cellule; but by what means they approach each other I have never been able to satisfy myself. The movement is slower, but of a similar character to that pertaining to the diatomacea. Each cell and each cellule is surrounded from its birth with a transparent mucous or protoplasmic membrane; but this is not peculiar to the euglenas, as it is also found around the cells of desmids, and in fact in most of the lower forms of algæ; and in the protococcus it assumes the form of a stiffish colloid jelly.

When the transparent mucous membranes of two cells touch each other, they will be seen to give way to mutual pressure on the part of both, and this goes on until the cells at last meet. If the cells are spherical in form, or elliptical, as there are some of both forms, the sides of each, as the pressure proceeds, or is exerted, gradually become flattened, so that the sides become parallel, or nearly so. Now, whether the walls of these cells have become ruptured at the junction I am not able to say, so as to allow the perfect conjugation to take place. At all events, in a few hours a gradual change in the colour of the chlorophyll is observed, in one generally, but not always in both the cells. The colour changes from a rather dull olive to a beautiful emerald-green. I could never observe any rupture in these cells on the sides opposed to each other; so that whatever it is that causes this change must pass through the walls of the cells. But that a sort of fertilization takes place by means of some subtile fluid which is able to penetrate the cell walls, I have not the least doubt. The greatest difference however here is, between the desmids and other allied forms, that the latter sometimes produce sporangia, and at other times the conjugating cells become ruptured, and the cell contents go to form a new frond. On the other hand, the euglena cells divide into two or more parts after conjugation; and so the multiplication of the species is carried on in this way to an indefinite extent.

There is yet another similarity with the desmids; namely, that the protoplasmic film which surrounds the euglena cells is frequently crowded with exceedingly minute green atoms, so small that a one-eighth Powell and Leland will not define them. Now, whether these are zoospores or not I am not able to say, but I think it very probable that they are. If this could be proved, it would ally them perhaps more especially with the *Volvocines* than with the true desmids; but as they now stand, to me they hold a place in this phase of their existence directly between the two above-named. The zoospores, if they be really such, are another feature in the economy of this organism, which brings it nearer to the vegetable series, as compared with the spermatozoa of the higher organisms. M. A. de Quatrefages says (*Metamorphoses of Man and the Lower Animals*, pp. 280-81): "With few exceptions, which doubtless are more apparent than real, we may say that the organic world has had a sort of double creation; that there are two worlds, male and female. Very close relations of co-existence may be found between the two, but

they may invariably be distinguished, and it is truly remarkable that their separation is an indication of high organisation. These two worlds appear indistinguishable only among the very lowest members of both kingdoms. Hermaphrodites are only found in the inferior groups of the four sub-kingdoms." Our euglena, then, would seem to belong to the hermaphrodites, and so each individual cell would represent two individual animals, each containing reproductive powers of both sexes within themselves. This reasoning holds equally good in the lower organisms of both kingdoms, so that between the two extremes of its existence it would seem impossible to say where the one began and the other terminated. And as Dr. Carpenter in *The Microscope*, p. 252, has well said, in the "present state of science it would be very difficult and is perhaps impossible to lay down any definite line of demarcation between the two kingdoms, since there is no single character by which the animal or vegetable nature of any organism can be tested. Probably the one which is most generally applicable among those lowest organisms that most closely approximate to one another is not, as formerly supposed, the presence or absence of spontaneous motion, but the dependence of the being for nutriment upon *organic compounds* already formed, which it takes in some way or other into the *interior* of its body; or, on the other hand, its possession of the power of obtaining its own alimentary matter by absorption from the *inorganic elements* on its exterior. The former is the characteristic of the *animal* kingdom as a whole; the latter is the attribute of the *vegetable*."

It will be seen by what I have already said, and by what is to follow, as compared with the definition just quoted, that the organism we have in view alternates between these two kingdoms; for when at its highest development it is an animal, having an oral aperture and flagellum attached, and it moves through the water in search of food; and at its lowest state of development it is a vegetable, so far as we are able to define a vegetable organism in these lower forms of life; for it must absorb nutriment from the surrounding medium in which it is placed, and its mode of propagation is that of a vegetable: so that this organism appears to be one of those indefinite forms which illustrates very clearly the curious fact of "alternation of generation." At the highest stage of development this creature has the form of a fish (fig. 1), with a depressed transverse slit for its mouth; the upper lip very slightly overhangs the lower; attached to this

is a long whip or flagellum, and the oral aperture is set round with short setæ or little bristles; the head is white and nearly transparent, and in its centre are a number of crimson-coloured cells, which seem to represent the eye. The body is coloured green, from its containing a great number of mostly spherical cells, which lie between the two coats or sacs of which the animal is composed. The tail—which is conical, but it appears forked from the peculiar movement of the animal through the water—is like the head, white and transparent. From just behind the head to near the setting on of the tail there is an oblique line of bristles, which gives to the creature when moving through the water a spiral motion, so that it bores a hole as it were through the water. In the stage below this, when its body forms a flattened sphere (fig. 2), with the head or the tail just protruding, or perhaps both, it has a peculiar rolling motion; but keeping somewhat in a direct line, previous to this, that is, before either the head or the tail is developed, they remain nearly in a quiescent state; only a very slight oscillating movement can be detected in the spherical cells. At this stage two white spots can generally be detected; these are what ultimately prove to be the head and the tail, and in some a minute red dot or two may be seen, but not always. Where this colouring matter comes from, or how it is developed, I am not prepared to say. In the next stage below this the cells are spherical, generally speaking, and it must be borne in mind that the cells I am here speaking of are in reality a spherical mass of cells or cellules enclosed in a common envelope, this common envelope constituting the cell walls. It will be seen, then, that many of these cells are already provided with the coloured or crimson cellules which ultimately go to form when aggregated together the compound eye of the fully-developed animal; but it is very curious to note at this stage how much these several crimson cells are more or less scattered, and how they collect together to form the eye I cannot imagine. The fully-developed animal has but one eye, and in its passage through the water this eye is all that is necessary, as from the body being constantly whirled round, it sweeps the horizon of the creature at every turn. How this organ acts without optic nerve or brain to receive the impressions I am not prepared to say; but that there is nervous sensibility shown by the creature in its taking its food into an oral orifice, would rather imply that the whole creature, like the *amœbæ*, is a sensitive living mass without muscles or nerves.

In descending order the next stage is a spherical cell filled with cellules, but without any crimson eye-spots, and in this stage the cells conjugate, but not so freely as we shall see them lower down the scale, and they also divide in this state into either two or four, as the case may be, before or after conjugation. The fact of these large cells dividing in the manner that they do, and when they have so nearly approached the active or animal condition, is somewhat remarkable, showing, I think, that the vegetable nature of the organism is here exerting its influence over that of the animal; and we seem to be here almost on the line of demarcation between the two kingdoms. (See fig. 12.)

It is at this stage and the one previous that these cells encyst themselves, and go into winter quarters. Sometimes one large cell will surround itself with a treble ring of the protoplasmic matter. These rings do not touch each other, but are quite distinct; the two outer rings, although transparent at first, soon become of a yellowish-brown colour, and seem to grow thicker until they are quite opaque; the cell is then lying on the bottom of the vessel, where it will remain until warmer weather, when this envelope bursts and discloses the cell, which is then set free to perpetuate its like. (Fig. 6.) In nearly every instance of encysting that I observed, the cells enclosed had the eye-spots more or less developed; in some cysts there were a group of cells, some that had just divided into two or four, and some that were still in conjugation, each cell having the eye-spots developed, and one very large cyst had three large uniform cells; these cells were each surrounded with a protoplasmic film, and each of them had from three to four small groups of crimson eye-spots, as if these cells intended to produce a rather numerous progeny. It is a somewhat remarkable fact, at the same time it shows the force of nature, that although they were living in my room in a temperature which scarcely falls below 48 or 55 degrees, they should still persist in going into winter quarters, just as if they had been exposed to the winter's cold.

The encysting of this euglena is very like that of the vorticellæ; the whole process is nearly the same, even to the sacculation of a fully-developed cell just previous to its arriving at the animal form. (Fig. 5.) It does not appear to undergo any metamorphosis, so far as I could discover, during the process of encysting, or afterwards; the whole process seems to be merely for protecting the vital energy of the organism during its winter hybernation. On July 6th, some of the larger cells assumed a moriform appearance, from the

pressure of some of the larger cellules on the walls of the parent cell; the pressure was so great that they stood out like the pips of a mulberry. These cells might then pass very well for one of the genus "*cosmarium*" amongst the desmids. On the 8th May, the euglenas in the watch-glass had formed themselves into a floating green covering on the surface of the water, some of them were conjugating, and certainly much resembled cells of *protococcus*; the sides of these cells were flattened against each other, and each cell showed the two white spots indicative of the head and tail of the animal. The whole mass of euglenas will remain on the surface of the water for some indefinite time, and then they will all descend to the bottom, and there remain for some little time, precisely as we see the algæ on our ponds in certain hygrometric states or conditions of the atmosphere; but why these euglenas should follow out this same law, when living in my room in a comparatively dry atmosphere and equable temperature, I do not know; it seems that it is a "law," and not the circumstances of the case, that causes this rising and falling.

On the 19th many of the cells remained at the bottom of the water in a quiescent state; these were filled with elliptical cellules. These elliptical cellules appear to be more of the vegetable than animal, and why there should be two sets of cellules I am at a loss to understand, as some of the parent euglena's cells contain spherical cellules, whereas others contain elliptical ones. These elliptical ones measured when they issued from the parent cell about 6000th of an inch long. On the 23rd numbers of these elliptical cellules were in conjugation, some in twos, others in fours together, and wherever this was the case a change of colour in the chlorophyll was the result; sometimes only one cell would change colour and sometimes both, but I was never able to detect any rupture in the cells during conjugation. After this process (and there appears to be no fixed time for it) these cells burst and discharge their contents into the protoplasmic film and water.

Division then takes place very rapidly amongst these minute cellules. A white or transparent line is seen to intrude itself across the green body; and very frequently two of these lines may be seen intersecting each other at right angles. The cause of this I lay beyond me to explain. And whether it be the protoplasm by which each cell is surrounded from its birth, or whether it is an exudation from the cell contents which goes to form these divisions, I cannot say. But whatever may be the governing power, it would

seem to lie more, if not entirely, in the large cellules contained in each cell; for each cell has from one to four larger cellules. And it appears to be a law in the economy of this euglena, and which is extended to all the researches into the "beginnings of life;" for, from the very earliest formation of cells and protoplasmic matter, there is always one larger or leading cellule in each cell. How it obtains this superiority or governing power over the rest I am not prepared to say; but that it has this superiority I am fully convinced. (See figs. 9, 10.)

If a parent cell contains two of these governing cellules, then the cell divides into two; if it contains four, then it divides into four, and each of these governing cellules takes up its place in each division of the cell. I have carefully examined these governing bodies, but I can discover no difference in them from the rest of the cellules. At the same time, I am convinced of their holding a superior position or rank to the rest of the cell contents.

Up to this time the euglenas have not advanced much beyond the vegetative process. Conjugation and division has progressed at such a rate that now their name is legion; but so far they have not reached to the full-grown animal; and so far we have seen nothing of those brilliant eye-spots on the recently developed forms. Now they are beginning to appear, and with the eye-spots a restless disposition; for while the euglenas remain at the vegetable end of their existence, they remain in a quiescent state, not moving except up and down the water from top to bottom, and *vice versa*, and the cells moving towards each other to conjugate. But when the eye-spots begin to appear there is more movement with them, and this increases as the euglena proceeds towards the animal form. These eye-spots do not always occur in the place they ultimately occupy, but sometimes, and not unfrequently, in the centre of an ovate or elliptical or spherical euglena.

The transparent film which surrounds the cells in every stage of their existence, and which is only lost sight of when the organism has approached near to the animal condition, is of very great importance to these cells. It appears to be endowed with the same properties as the pseudo-podia of the foraminifera, amœba, &c.; that is, it can elongate and contract at will. (?) For instance, when two cells are approaching each other, the protoplasm will be seen to bulge out like an obtuse pseudo-podia on each side of the approaching cells. At length they touch; the protoplasm adheres; the two cells then re-

mind one of the Siamese-twins. (Fig. 11.) This uniting band contracts gradually, until the two cells are brought close together. A change in the colour of the chlorophyll soon follows this conjugation. But, as I have before said, by what means this approach is brought about I am not prepared to say; or how the cells know that they are nearing each other, or whether the cells are the directors of the protoplasm, or whether the latter is the controlling power, is a question I am not able to answer. But whatever it may be, it is the same as we see in the protoplasmic matter in the "beginnings of life," or wherever any organic substance has been reduced to the lowest stage of disintegration. Vitality in this is only suspended for a short time; or, as some assert, that life is developed *de novo*. My own impression is, that it has never been destroyed. It may possibly be arrested for a time, and things may change in form, but the something which we call life is never absent.

On March 3rd I observed some of the elliptical cells that appeared to be about one-third grown exhibit a peculiar movement, as if there resided within some living creature which wanted to free itself, as a kind of elongating or pushing movement was very distinctly observable at one end. This movement is very common in the larger or full-grown euglenas. When the white spots have appeared which mark the head and the tail in these, the movement is very strong; but I never saw it in any so low down the scale, or so near to the vegetable pole of their existence.

On April 29th I observed that the specimens under observation were not progressing, and it occurred to me that they were starving, as their natural habitat is in drains containing a large amount of organic matter held in suspension, such as drains from stables, farm-yards, &c., where the water is almost as black as porter. I consequently obtained a small quantity, and mixed it with the water so as just to tinge the latter. A change very soon came over the euglenas, for on the 4th of May they had become of the most intense green, and conjugation and division, which before had been retarded, was now going on at a prodigious rate. The majority of them had at this time resorted to the bottom of the vessel, which was fully exposed to the light and sun. The whole bottom of the glass was now covered with a green stratum of euglenas in various stages of development; and this stratum was covered with globules of air, or gas, most probably the latter. They then exhibited the phase of true algæ. The air or gas was evidently propagated or elaborated in the

euglenas, as the bubbles were being constantly liberated, and rose to the surface, where they exploded, so that whilst the sun was shining on the glass a constant stream of air or gas bubbles was rising to the surface through the water. I may mention here that none of the euglenas at this time had arrived at the active or animal condition, we may consequently view them as a whole as vegetables, of which the generation of gas is a common feature in the life of algae in our ponds and ditches. No animal strictly speaking (if we *can* speak strictly on this very difficult question) generates oxygen gas that I am aware of, as I presume it was oxygen that was given off, and that this is a function of the vegetable kingdom only. But even if it was carbonic-acid gas that was given off, the case would not be singular, for we have a parallel case in the fungi, which give off carbonic-acid gas, and in this case some of the lower forms are regarded by some investigators as more animal than vegetable.

Dr. F. Stein, who has made the infusoria his especial study, and who observed during his investigations the encysting of the euglenas, asks for what purpose is this encysting process. "The cyst was evidently intended for something more than a coffin," and he believed that this process had reference to their multiplication, for in some cases where only one became encysted two individuals came out. It will be seen from what I have said upon this that this encysting process is not specially for the purpose of multiplication, but is really for the preservation of the species; for I have found during this spring and summer that in a drain where I have been in the habit of collecting specimens, this drain had become dried up, when not a single specimen could be found, but when the drain had again become filled the euglenas again made their appearance. Besides, those that I had under observation in my room regularly encysted themselves, and went into winter quarters. I think, therefore, there can be no doubt as to the use of this process, that it is for protection, and that it has nothing to do with the act of multiplication, as this is carried on in every stage of its existence except that of the very highest, when it has attained to the perfect animal.

I have now recorded all the phases of this organism's existence, so far as they presented themselves to me during a long study of it, but so far I have never been able to detect any true ovæ or eggs. Its continuity is, so far as I can see, carried on by division and by swarm-cells; that is, after two

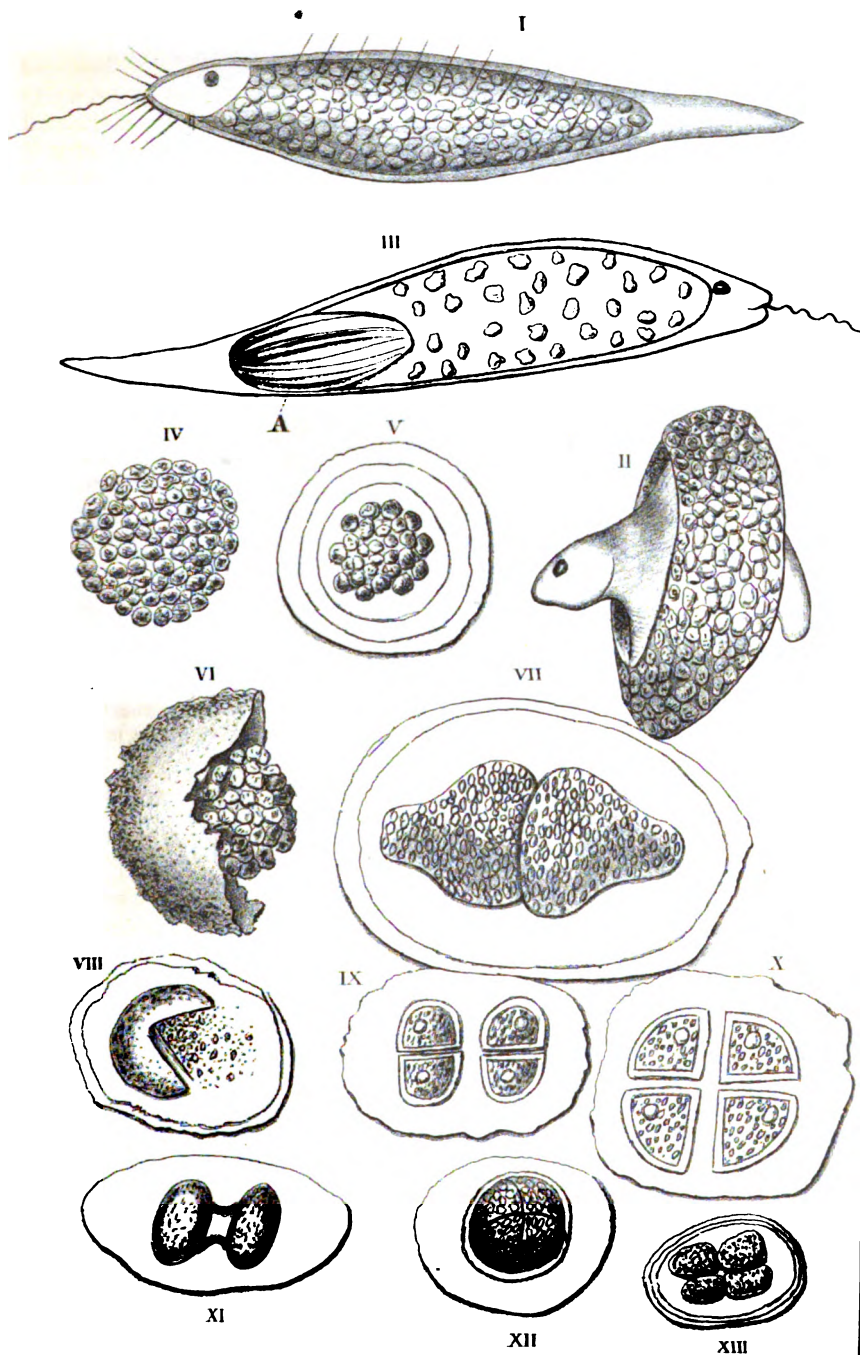
large cells have conjugated, and the contents have become fertilized, after a time one, or perhaps both, of these cells may burst and discharge their contents into the water, and so liberate quite a cloud or swarm of minute cells, which, should all go well with them, will become the fish-like creatures which we call *Euglena viridis*.]

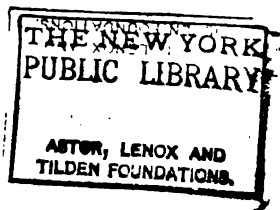
EUGLENA VIRIDIS.

Natural size, length about one two hundred and fortieth of an inch.

- I. The fully-developed animal.
- II. The animal being developed, showing the head and tail.
- III. Showing the contractile vesicle. A.
- IV. A spherical mass of cells with red eye spots, a previous stage to No. 11.
- V. A group of cells surrounded with three envelopes of protoplasm previous to hybernation.
- VI. A group of cells or incipient animal, with part of its winter envelope broken to show the stage it had attained.
- VII. This might have been taken for a *Eurastrum* had not one cell been provided with eye spots.
- VIII. Large parent cell bursting and discharging its contents into the protoplasmic film which surrounds it. The beginning of the vegetable life.
- IX. Two cells after conjugation have divided into four, each cell contains one leading or parent cell.
- X. A cell after conjugation has divided into four, each division having a large or leading cell, which after liberation proceeds to perpetuate the species.
- XI. Two elliptical cells filled with endochrome are being drawn together for conjugation by the protoplasmic substance which surrounds each cell.
- XII. A large cell after it has attained to very near the animal condition is preparing to divide into four equal parts, the dissimilants are just observable.
- XIII. Four cells prepared to hibernate, having surrounded themselves with three thick envelopes.

The eye spots cannot well be shown in the illustration, without being printed in colours, as they appear only as crimson-coloured cells.





VERBAL PROVINCIALISMS OF SOUTH-WESTERN DEVONSHIRE.

BY W. PENGELLY, F.R.S., F.G.S., ETC.

(Read at Torrington, July, 1875.)

I. INTRODUCTORY AND EXPLANATORY.

Two Glossaries of Devonshire Verbal Provincialisms have recently been published. The first, "Appendix E" in Miss Fox's "Kingsbridge and its Surroundings,"* professes to be "A list of *some* of the provincialisms which may still be heard among the working classes in the rural districts surrounding Kingsbridge;" whilst the second, entitled "Provincialisms of West Devonshire," is a "Glossary, chiefly of agricultural terms, taken from Marshall's Rural Economy of the West of England. 2 vols. 8vo. London, 1796; vol. i. pp. 323-332," reprinted by the "English Dialect Society," with a few notes, marked J.S., by Mr. J. Shelly, of Plymouth.†

Though neither of the Glossaries professes to be complete—the first being a list of only "*some* of the provincialisms" of a small district, and the second being confined to chiefly agricultural terms used in the west of our county—and though, taken together, they do but attempt to represent South-western Devonshire, and that but imperfectly, the subject is one of so much interest, both in itself and in its numerous connexions, that it has appeared desirable to transfer both lists to our *Transactions*; and in the hope that this will be acceded to, I have prepared the Notes which follow them. It will be in the recollection of many of the members of the Association that the subject has already occupied our attention. In 1866, our late distinguished member, Sir John Bowring, read a paper, during the Tavistock meeting, on "Language, with special reference to the

* "Kingsbridge and its Surroundings." By S. P. Fox. 1874. "Appendix E. Provincialisms," pp. 261-8.

† "English Dialect Society. Series B. Reprinted Glossaries." 1873. "Provincialisms of West Devonshire," pp. 69-75.

Devonian Dialects," which was printed *in extenso* in our First Volume, Part V.;* and whilst availing myself of the materials he then brought together, I have had again and again to regret, whilst compiling the present communication, that I could no longer have the advantage of his living assistance and counsel.

The lists are arranged, in their entirety, in two parallel columns, so as to keep them quite distinct, and yet to secure an alphabetical order for the whole, as if they formed but one list or glossary. Each word is numbered, and in the few cases in which the same word occurs in each list, one and the same number is given to it in each of them: thus, for example, the word *ARRISHES* occurs in Miss Fox's list and also in Mr. Marshall's, and is No. 3 in each. Occasionally, words having the same meaning, but differing slightly in orthography, occur in the two lists. These also have, when possible, one and the same number: thus *APPLEDRANE*, No. 1 in Miss Fox's list, is represented by *APPLEDRONE*, No. 1 in Mr. Marshall's. This, however, is not unfrequently incompatible with the alphabetical arrangement. For example, *MAURS* = *Roots*, No. 164 amongst Miss Fox's words, corresponds in meaning with *MOKES* = *Roots* amongst those of Mr. Marshall, where it is No. 174.

The words may be said to form three groups:—1st. Words which occur in modern English dictionaries. 2nd. Words which, though not found in modern English dictionaries, are at present, or were formerly, used beyond South-western Devonshire. 3rd. Words which, so far as I have been able to ascertain, are peculiar to South-western Devonshire.

Most of the words are followed by asterisks, which are intended to direct attention to the Notes on them respectively. The number of the word in the list of Words is, of course, that also of the note on it in the list of Notes. Thus, the asterisk following the word *APPLEDRANE* denotes that there is a Note on the word; and as the number of the Word is 1, that is also the number of the corresponding Note; and so on.

The Notes consist of gleanings from the modern English Dictionaries and the Glossaries of provincial dialects I have been able to command, together with memoranda made, from time to time, in the ordinary course of reading; and no

* *Op. cit.* pp. 13-33.

hesitation has been felt in following a word through different meanings and orthographical disguises. For example: BESOM, a Broom, led to BASAM, Heather; which, in its turn, led to BUZZUM-CHUCK'D, a deep dark redness, i.e. the colour of the heather flower, in the cheeks.

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[As the words in Mr. T. Q. Couch's lists are in most cases identical with those in his father's list in the *History of Polperro*, they will not be used in this paper, except in the few instances in which they furnish information not given in the *History*. W. P.]

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Ibid. "A Great Mine Conference," &c. &c. [The only piece in this Collection written by Mr. Daniel is a] "Dialogue about India, China, Railways, and Unions, between John Twaddle and Richard Trewen, two Cornish Miners." *Devonport*: W. Wood.

DRYDEN, John. "The Poetical Works of John Dryden. [Edited] by the Rev. George Gilfillan." *Edinburgh*: James Nichol. 1855.

DUNCUMB, John, A.M. "Glossary of Words used in Herefordshire." Re-printed, by the English Dialect Society, B.* 12, from "Collections towards the History and Antiquities of the County of Hereford. By John Duncumb, *Hereford*, 1804. Vol. i. pp. 206-215." *London*: Trübner & Co. 1874.

FALCONER, William. "The Poetical Works of Beattie, Blair, and Falconer. [Edited] by the Rev. George Gilfillan." *Edinburgh*: James Nichol. 1854. [W. Falconer. pp. 161-298. W. P.]

FORFAR, William Bentinck. "The Exhibition and other Cornish Poems." *Truro*: James R. Netherton. [This Collection contains 16 pieces, of which 7 only are by Mr. Forfar. The foregoing title is on the Wrapper, that on the Title-page is] "Cornish Tales in Prose and Verse, by various Authors. With a Glossary." 1867.

FOX, Charles. "Dolly Pentreath and other Humorous Cornish Tales, in Verse. By J. Trenhaile." *Devonport*: W. Wood; *London*: Houlston & Wright. [The last piece in this tract was written by Mr. C. Fox about 1790, and is entitled] "A Cornish Dialogue between Grace Penvear and Mary Treviskey."

* The publications of the "English Dialect Society" are divided into "Series" defined by letters of the alphabet. "Series B" consists of "Re-printed Glossaries," which are marked 1, 2, &c. "Series C," of Original Glossaries, and Glossaries with fresh Additions."

GARLAND, Thomas. "A list of Words in common use in West Cornwall. By Thomas Garland." *Journal of the Royal Institution of Cornwall*. Vol. i. No. 3. April, 1865. pp. 45-54.

GASKELL, Mrs. "Cranford and other Tales [including "The Crooked Branch." W.P.]. By Mrs. Gaskell. A new Edition." *London*: Smith, Elder, & Co. 1873.

Ibid. "North and South. By Mrs. Gaskell. A new Edition." *London*: Smith, Elder, & Co. 1874.

GERVIS, Mrs. "Original Cornish Ballads: chiefly founded on Stories humorously told by Mr. Tregellas. To which are appended some Drafts of Kindred Character from the Portfolio of the Editress [i.e. Mrs. Gervis. W. P.]. The whole prefixed by an Introductory Essay on the peculiar characteristics of the Cornish Peasantry; from the gifted pen of Mrs. Miles." *London*: Simpkin, Marshall, and Co; *Penryn*: T. Whitehorn. 1846. [Two of the pieces only are by Mrs. Miles. W. P.]

GOWER, John. "Specimens with Memoirs of the less-known British Poets. [Edited] by the Rev. George Gilfillan." Three vols. *Edinburgh*: James Nichol. 1860. [*John Gower*. Vol. i. pp. 1-13. W. P.]

GROSE, Francis. "A provincial Glossary; with a Collection of Local Proverbs, and Popular Superstitions." By Francis Grose, Esq., F.A.S. The second edition. *London*: S. Hooper. 1790.

HALLIWELL, James Orchard. "A Dictionary of Archaic and Provincial Words, Obsolete Phrases, Proverbs, and Ancient Customs, from the Fourteenth Century." By James Orchard Halliwell, Esq., F.R.S. In Two vols. Eighth edition. *London*: John Russell Smith. 1874.

HARLAND, Captain J. "A Glossary of Words used in Swaledale, Yorkshire. By Captain John Harland, of Reeth, near Richmond." Published by the English Dialect Society, C. 1. *London*: Trübner & Co. 1873.

HEARN. "Dialectical Words extracted from Hearn's Glossaries to Robert of Gloucester and Peter Langtoft. Ed. 1810." Reprinted by the English Dialect Society, B. 14. *London*: Trübner & Co. 1874.

HENWOOD, George. "A great Mine Conference (A Vision). By George Henwood, F.G.S. The Gwennap Bal Boys. (A Cornish Dialogue.) By George Henwood, F.G.S. Founded on Fact. The Prechen Kappen. (A Cornish Dialogue.) By George Henwood, M.E." [The foregoing pieces are the first three in a tract containing seven, of which the remainder are

by other authors. W. P.] *Devonport*: W. Wood; *London*: John Russell Smith.

HIGHAM, T. R. "The Exhibition, &c." [See FORFAR. This collection contains 3 pieces by Mr. Higham. W. P.]

HUTTON, Rev. John. "A Glossary of Old and Original Words now used in the North of England." Reprinted by the English Dialect Society, B. 1, from a "Tour to the Caves, in the environs of Ingleborough and Settle, in the West Riding of Yorkshire, &c., in a letter to a friend. Second edition. 1781. pp. 86-89." The letter is addressed to Thomas Pearson, Esq., of Burton in Kendal, Westmoreland, and signed J[ohn] H[utton]. *London*: N. Trübner & Co. 1873.

JAMES I. of Scotland. "Specimens with Memoirs of the less-known British Poets. [Edited] by the Rev. George Gilfillan." Three vols. *Edinburgh*: James Nichol. 1860. [*James I. of Scotland*. Vol. i. pp. 34-44. W. P.]

JENNINGS, James; and James Knight. "The Dialect of the West of England. Particularly Somersetshire; with a Glossary of Words now in use there; also with Poems and other Pieces exemplifying the Dialect. By James Jennings. Second edition. The whole revised, corrected, and enlarged, with two Dissertations on the Anglo-Saxon Pronouns, and other Pieces. By James Knight Jennings, M.A." *London*: John Russell Smith. 1869. "The following Glossary," says Mr. Jennings, "includes the whole of Somerset, East of the River Parret, as well as adjoining parts of Wiltshire and Gloucestershire. West of the Parret many of the words are pronounced very differently indeed, so as to mark strongly the people who use them." p. xiii.

JOHNSON, Dr. "Dr. Johnson's General Dictionary of the English Language; enlarged by the Addition of several thousand Words, selected from the most approved Authors: to which is prefixed a Comprehensive Grammar. By William Perry." *London*: John Stockdale. 1802.

JONES, William Arthur, M.A., F.G.S. [See Williams.]

KING, Richard John. "A Handbook for Travellers in Devon and Cornwall." Eighth edition. Revised. *London*: John Murray. 1872.

LAKE, Dr. "Notes on the Dialect of Teignmouth," [sent me in Manuscript by Dr. Lake of Teignmouth, with permission to use them. W. P.]

LEWIS, Rev. John. "Glossary of Words used in the Isle of Thanet." Reprinted, by the English Dialect Society, B. 11, from the "History and Antiquities, as well Ecclesiastical as Civil, of the Isle of Tenet in Kent. Second edition. London, 1736; pp. 35-39." London: Trübner & Co. 1874.

LOCK, Peter. "An Exmoor Scolding. In the propriety and decency of Exmoor Language between two Sisters, Wilmot and Thomasin Moreman, as they were spinning; Also, an Exmoor Courtship. A New Edition; containing Marginal Notes and a Vocabulary at the end for explaining uncouth expressions and interpreting barbarous Words and Phrases."

Exeter. "The following collection," [says the anonymous author of the Preface, which unfortunately is without date] "was originally made about the beginning of the present century, by a blind itinerant fiddler (one *Peter Lock*, of North Molton or its neighbourhood). . . This attracted the notice of a neighbouring clergyman, who, by the fiddler's assistance, put the *Exmoor Scolding* into the form in which we now have it, and before his death (which happened soon after the year 1725) communicated it to the editor of the first and second editions, who perfected the *Courtship*. . . . It may also be requisite to observe here, that the forest of *Exmoor* . . . is for the most part in the county of *Somerset*; and though *Parracombe* and *Challacombe*, in its neighbourhood, which is the scene of our drama, be in *Devonshire*, it must not be thence inferred that the same dialect, in all particulars, extends throughout the whole county, it being chiefly confined to the northern parts thereof; for many words and phrases therein would not be well understood by people in the *South Hams* . . . where the dialect varies as much from this as this from that of Dorset and Wiltshire." pp. iv.-v. [The late Sir John Bowring, however, says] "The authors of the *Exmoor Scolding* and *Exmoor Courting* were Andrew Brice and Benjamin Bowring. The former was a learned and laborious bookseller in Exeter. . . The latter (my paternal great-grandfather) was the grandson of a John Bowring of Chumleigh." *Trans. Devon. Assoc.* Vol. i. Part v. 1866. p. 28.

LYDGATE, John. "Specimens with Memoirs of the less-known British Poets. [Edited] by the Rev. George Gilfillan." Three vols. *Edinburgh*: James Nichol. 1860. [*John Lydgate*. Vol. i. pp. 46-51. W. P.]

MARSHALL, William Humphrey. (1) "Provincialisms of East Yorkshire, more especially of the Eastern Moorlands

and the Vale of Pickering." Reprinted, by the English Dialect Society, B. 2, from vol. ii. pp. 303-366 of "The Rural Economy of Yorkshire, comprizing the Management of Landed Estates, and the present practice of husbandry in the Agricultural Districts of that County. By Mr. Marshall. 2 vols. London, 1788." London: N. Trübner & Co. 1873.

Ibid. (2) "Provincialisms pertaining to the Rural Economy of Norfolk." Reprinted, by the English Dialect Society, B. 3, from vol. ii. pp. 373-392 of "Marshall's Rural Economy of Norfolk. 2 vols. London, 2d. edition, 1795." London: N. Trübner & Co. 1873. "The words particularly belong, in the first instance, to East Norfolk, which includes Norwich, Yarmouth, and North Walsham."

Ibid. (3) "Provincialisms of the Vale of Gloucester." Reprinted, by the English Dialect Society, B. 4, from vol. i. pp. 323-332, of "Marshall's Rural Economy of Gloucestershire. 2 vols. Gloucester, 1789. London: N. Trübner & Co. 1873. "The Vale of Gloucester," says Mr. Marshall, "is, in outline, somewhat semicircular: the Severn the chord, the environing hills the arch: the towns of Gloucester, Tewksbury, and Cheltenham forming a triangle within its area. Its extent, from the foot of Maston Hill . . . is about 15 miles: from the Severn to the foot of Dowdeswell Hill, 7 or 8 miles."

Ibid. (4) "Agricultural Provincialisms of the District of the Midland Station." Reprinted, by the English Dialect Society, B. 5, from vol. ii. pp. 377-389, of "Marshall's Rural Economy of the Midland Counties. 2d. edition. London, 1796." London: Trübner & Co. 1873. "Mr. Marshall defines the Midland District as . . . 'including the principal parts of the counties of Leicester, Rutland, and Warwick, with the northern margin of Northamptonshire, the eastern point of Staffordshire, and the southern extremities of Derbyshire and Nottinghamshire; the town of Leicester being situated near its centre.'"

MILES, Mrs. Original Cornish Ballads, &c. [See Gervis, Mrs. This Collection contains two pieces by Mrs. Miles. W. P.]

MILTON, John. "Milton's Poetical Works [Edited] by the Rev. George Gilfillan." Two vols. Edinburgh: James Nichol. 1853.

MONTHLY MAGAZINE. "A provincial Vocabulary; containing for the most part such Words as are current among the common People of Devonshire and Cornwall. 1808." The *Monthly Magazine*; or *British Register*: London. Richard Phillips. Vol. xxvi. Part ii. for 1808, pp. 421-3 and 544-5;

and Vol. xxix. Part i. for 1810, pp. 431-7. The Vocabulary extends no further than "Girty Milk."

MOORE, Rev. Thomas. "A List of some of the Provincialisms formerly at least prevalent among the common people of the county, though now probably, from the influence of modern improvement, gradually getting out of use." The "History of Devonshire from the earliest period to the present."

NOTES AND QUERIES. A medium of inter-communication for Literary Men, Artists, Antiquaries, Genealogists, etc. *London*.

PALMER, Mrs. "Devonshire Courtship, in Four Parts. To which is added a Glossary." *Devonport*: W. Wood; *London*: Houlston and Wright. "These Dialogues," [says the anonymous author of the Preface, which is unfortunately without date], "were originally written by Mrs. Palmer, of Great Torrington, a sister of Sir Joshua Reynolds. . . . Mrs. Gwatkin, a daughter of Mrs. Palmer, was induced to publish the *whole*, from the original manuscript in her possession. . . . The Glossary [was] written, for the most part, by the late Rev. John Phillips, of Membury, Devon." pp. iii.-v.

PARISH, Rev. W. D. "A Dictionary of the Sussex Dialect and Collection of Provincialisms in use in the county of Sussex." By Rev. W. D. Parish. *Lewes*: Farncombe & Co. 1875.

PERCY, Bishop. "Reliques of Ancient English Poetry: consisting of old heroic Ballads, Songs, and other pieces of our earlier Poets; together with some few of later date. By Thomas Percy, Lord Bishop of Dromore. Reprinted from the Author's last edition. [Edited] by the Rev. George Gilfillan." Three vols. *Edinburgh*: James Nichol. 1858.

PERRY, William. [See JOHNSON.]

PRINCE, Rev. John. "The Worthies of Devon. By John Prince, Vicar of Berry Pomeroy, in the same county. A new edition, with Notes." *London*. 1810.

PULMAN, G. P. R. "Rustic Sketches; being Rhymes and 'Skits' on Angling and other subjects, in one of the South-western Dialects; with a copious Glossary and General Remarks on country talk." By G. P. R. Pulman. Third edition. *London*: John Russell Smith. 1871.

RALEIGH, Sir Walter. "Reliques of Ancient English Poetry. By Thomas Percy, Lord Bishop of Dromore. [Edited] by the

Rev. George Gilfillan." Three vols. *Edinburgh*: James Nichol. 1858. "The Lye," by Sir Walter Raleigh. Vol. ii. pp. 241-4.

RAY, John, F.R.S. "Ray's Collection of North-country Words." Reprinted by the English Dialect Society, B. 15. *London*: Trübner & Co. 1874.

Ibid. "Ray's Collection of South and East-country Words." Reprinted by the English Dialect Society, B. 16. *London*: Trübner & Co. 1874.

ROCK, William Frederick. "Jim and Nell: A Dramatic Poem in the Dialect of North Devon [Barnstaple. W. P.]. By a Devonshire Man [*i.e.* W. F. Rock. W. P.]. *London*. Printed for Private Circulation." 1867. [Mr. Rock, who was so good as to send me a copy of his poem, has kindly allowed me to make use of his name as the author. W. P.]

SANDYS, William, F.S.A. "Specimens of Cornish Provincial Dialect, collected and arranged by Uncle Jan Treenoodle [*i.e.* W. Sandys. W. P.], with some Introductory Remarks, and a Glossary, by an Antiquarian Friend." *London*: John Russell Smith. 1846.

SHAKSPERE, William. "The Works of William Shakspeare; containing his Plays and Poems, from the text of the editions by Charles Knight." *London*: Charles Cox. 1849.

SPENSER, Edmund. "The Poetical Works of Edmund Spenser. [Edited] by the Rev. George Gilfillan." Five vols. *Edinburgh*: James Nichol. 1859.

SURREY, The Earl of. "The Poetical Works of William Shakspeare and the Earl of Surrey. [Edited] by the Rev. George Gilfillan." *Edinburgh*: James Nichol. 1856.

THOMSON, James. "Thomson's Poetical Works. [Edited] by the Rev. George Gilfillan." *Edinburgh*: James Nichol. 1853.

THORESBY, "Letter to Ray. A list of Yorkshire Words, presumably from the neighbourhood of Leeds, taken from Thoresby's Letter to Ray, dated Leeds, April 27, 1703." Reprinted, by the English Dialect Society, B. 17, from "Philosophical Letters between the late learned Mr. Ray and several of his ingenious correspondents, natives and foreigners. . . . Published by W. Derham." *London*: W. & J. Innys, 1718; pp. 321-342. *London*: Trübner & Co. 1874.

TREGELLAS, John Tabois. "Cornish Tales, in Prose and Verse, by J. T. Tregellas. With a Glossary." *Truro*: James R. Netherton.

Ibid. "Peeps into the Haunts and Homes of the Rural

Population of Cornwall." By J. T. Tregellas. *Truro*: James R. Netherton. 1868.

TRENHAILE, John. "Dolly Pentreath and other Humorous Cornish Tales, in Verse." By J. Trenhaile. *Devonport*: W. Wood. *London*: Houlston and Wright. [The last piece in this Collection is by Mr. C. Fox. W.P.]

VANCOUVER, Charles. "General View of the Agriculture of the County of Devon." By Charles Vancouver. *London*: 1808.

VERRALL, Georgina. "The Exhibition," &c. [See FORFAR. This Collection contains 1 piece—"A Cornish Ghost Story"—by Miss Verrall. W.P.]

WALKER, John. "A critical pronouncing Dictionary and Expositor of the English Language. By John Walker. A new edition, carefully revised and corrected." *London*: T. T. & J. Tegg; Richard Griffin & Co., Glasgow. 1833.

WILKEY, John. "The Farmer's Return from Exeter Assizes," 1820. [Sent me in Manuscript by Mr. Wilkey of Exeter, with permission to use it. W.P.]

WILLAN, Robert, M.D., F.R.S., and S.A. "A list of Ancient Words at present used in the Mountainous District of the West Riding of Yorkshire. Communicated by Robert Willan, M.D., F.R.S., and S.A." Reprinted by the English Dialect Society, B. 7, from pp. 138-167, vol. xvii. of the 'Archæologia,' published by the *Royal Society of Antiquaries*. *London*: N. Trübner & Co. 1873.

WILLIAMS, Wadham Pigott, M.A. "A Glossary of Provincial Words and Phrases in use in Somersetshire." By Wadham Pigott Williams, M.A., and the late William Arthur Jones, M.A., F.G.S. "With an Introduction" by R. C. A. Prior, M.D. *London*: Longmans, Green, Reader, & Dyer; *Taunton*: F. May. 1873.

WHYTE-MELVILLE, G. J. "Katerfelto. A Story of Exmoor." By G. J. Whyte-Melville. *London*: Chapman and Hall. 1875.

WOLCOT, Dr. John. "The Works of Peter Pindar, Esq. A New Edition." Five Vols. *London*: 1812.

For the information respecting Ashburton I am indebted to George Smerdon, a native of that town, but now resident at Torquay; and for that respecting Torquay my thanks are due to Mr. Burt, Curator of the Museum of the Torquay Natural History Society; and to Mr. Fisher, gardener, Tor-

quay. My own memory has supplied the facts placed to the credit of Looe, in East Cornwall.

The quotations of which the Notes mainly consist are preceded by the authors' names, except in the case of those from the Monthly Magazine, and also those from Mr. Marshall's writings. In the former, the author's name being unknown to me, the abbreviation "Mon. Mag." has been employed; whilst in the latter, as Mr. Marshall was the author of five of the Glossaries (ii. to vi. inclusive) lately reprinted by the English Dialect Society, it has been thought best to indicate the *Dialect* to which the words respectively belong; and for that purpose an abbreviation of the name of the district has been prefixed.

References, in an abridged form, are appended to the numerous illustrative quotations in the Notes.

Such remarks as I have been led to annex to my gleanings are followed by the initials "W.P.," and placed within brackets.

Abbreviations.

The following is an explanation of the abbreviations I have employed. No attempt has been made to explain those used by the authors quoted, as I have no special information respecting them.

"Ballads"	...	= "Original Cornish Ballads," &c. See GERVIS, in the list of authors.
"Batch"	...	= "A Batch of Humorous Tales and Sketches." See DANIEL.
"Branch"	...	= "The Crooked Branch." See GASKELL.
"Companion"	...	= "Companion for the Cornish Thalia." See DANIEL.
"Conference"	...	= "Great Mine Conference," &c. &c. See HENWOOD.
"Cooke, Moore"	...	Two or more authors' names prefixed to one and the same quotation signify that the passage in one is identical with that in the other, or others.
"Couch"	...	= "Jonathan Couch."
"Dev. Hob"	...	= "Devonshire Hob's Love." By Dr. Wolcot (Peter Pindar).
"Dolly"	...	= "Dolly Pentreath and other humorous Cornish Tales." See TRENHAILE.

- "Eng. Dial. Soc., B. 1" = English Dialect Society, Series B. (Reprinted Glossaries), No. 1, and so on for other numerals.
- "Eng. Dial. Soc., C. 1" = English Dialect Society, Series C. (Original Glossaries), No. 1, and so on for other numerals.
- "E. Norf." ... = East Norfolk. See MARSHALL.
- "Evenings" ... = "Mirth for Long Evenings," &c. See DANIEL.
- "Exhib." ... = "Exhibition and other Cornish poems." See FORFAR.
- "E. York" ... = East Yorkshire. See MARSHALL.
- "Lock" ... = "Exmoor Scolding and Exmoor Courtship." See LOCK.
- "Mon. Mag." ... = "Monthly Magazine."
- "Mary Ann." ... = "Mary Anne's Experiences," &c. See DANIEL.
- "Mid. Count." ... = "Midland Counties or District. See MARSHALL.
- "Mid. Elect." ... = "Middlesex Election," &c. By Dr. Wolcot.
- "Motley" ... = "The Muse in Motley," &c. See DANIEL.
- "N. & Q." ... = "Notes and Queries."
- "New Budget" ... = "New Budget of Cornish Poems." See DANIEL.
- "One and All" ... = "Mirth for One and All." See DANIEL.
- "Peeps" ... = "Peeps into the Haunts and Homes," &c. See TREGELLAS.
- "Perry" ... = Perry's Edition of Johnson's English Dictionary.
- "Portfolio" ... = "Pickings from My Portfolio." See DANIEL.
- "Ray, N." ... = "Ray's Collection of North-country Words." See RAY.
- "Ray, S.E." ... = "Ray's Collection of South and East Country Words." See RAY.
- "Roy. Vis." ... = "Royal Visit to Exeter." By Dr. Wolcot.
- "Tales" ... = "Cornish Tales," &c. See TREGELLAS.

- "Thalia" ... = "Cornish Thalia." See DANIEL.
- "Vale Gloc." ... = Vale of Gloucester. See MARSHALL.
- "Wit" ... = "Wit and Humour," &c. See DANIEL.
- "2nd S. III. 240," &c. = Second Series, Third Volume, and 240th page (Notes and Queries), and so on for other numbers.

- I. and II. appended to quotations from Mr. Baird. I. = "Nathan Hogg's Letters and Poems;" and II. = "Second Series of Nathan Hogg's Letters and Poems." See BAIRD.

Arrangement of Quotations.

The quotations illustrative of the different words have been arranged in the following order:—The *Lexicographers* come first; and Walker, being the more modern, takes precedence of Perry's Johnson. Then follow, what may be called, the group of *Dialecticians*, headed, of course, by those of Devonshire, who are taken so as to march through the county in the order of Tavistock, Ashburton, Torquay, Teignmouth, Exeter, Torrington, Barnstaple, Exmoor, and the Valley of the Axe. King, Moore, and Vancouver, confining themselves to Devonshire, but not to any definite district in it, close this part of the group. They are followed by the *dialecticians* of the Border Counties, in the order of Somerset, Dorset, and Cornwall. In the last-named county the order followed is that of Looe, Polperro, Lostwithiel, and West Cornwall; whilst Bannister and Carew represent the county as a whole rather than any limited part of it; and Cooke and the *Monthly Magazine* admit of no limits other than that of Devon and Cornwall as a whole. The writers on the verbal provincialisms of districts beyond Devonshire and its border counties then follow in the order of the Vale of Gloucester, Herefordshire, Sussex, Isle of Thanet, East Norfolk, South and East of England, Midland District, East Yorkshire, West Yorkshire, Lancashire, and Scotland. Notes and Queries, Halliwell, Hearn, and Grose, being confined to no specified locality, close this group. Lastly, the contributions from Standard British Authors are arranged chronologically from Falconer to Chaucer—the most modern to the most ancient. Percy's *Reliques*, ranging over a considerable breadth of time, closes the list, which is given in its entirety below:—

Lexicographers.

1. Walker.

2. Perry.

Dialecticians.

3. Bray	Tavistock	29. Garland	} W. Cornwall
4. Smerdon	Ashburton	30. Gervis	
5. Burt	} Torquay	31. Henwood	
6. Fisher		32. Higham	
7. Lake	Teignmouth	33. Miles	
8. Baird	} Exeter	34. Sandys	
9. Bowring		35. Tregellas	
10. Wilkey		36. Trenhaile	
11. Wolcot		37. Verrall	} Cornwall
12. Palmer	Torrington	38. Bannister	
13. Rock	Barnstaple	39. Carew	
14. Lock	} Exmoor	40. Cooke	} Devon and Cornwall
15. Whyte-Melville		41. Monthly Mag.	
16. Pulman	Axe Vale	42. Marshall, 3	Glostershire
17. King	} Devonshire	43. Duncumb	Herefordshire
18. Moore		44. Parish	Sussex
19. Vancouver		45. Lewis	Isle of Thanet
20. Jennings		46. Marshall, 2	E. Norfolk
21. Williams	} Somersetshire	47. Ray, S. E.	S. & E. Eng.
22. Barnes		48. Marshall, 4	Mid. Counties
23. Pengelly	Dorsetshire	49. Marshall, 1	E. Yorkshire
24. Couch	} Polperro	50. Harland	N. Yorkshire
25. T. Q. Couch		51. Thoresby	} W. Yorkshire
26. Daniel	Lostwithiel	52. Hutton	
27. Forfar	} W. Cornwall	53. Willan	
28. Fox		54. Gaskell	Lancashire
		55. Ray, N.	N. England
		56. Burns	Scotland
		57. Notes and Queries	
		58. Halliwell	
		59. Hearn	
		60. Grose	

Standard British Authors.

61. Falconer	69. Spenser
62. Thomson	70. Surrey
63. Prince	71. Lydgate
64. Dryden	72. James I. of Scotland
65. Milton	73. Gower
66. Browne	74. Chaucer
67. Raleigh	75. Percy
68. Shakspeare	

II. THE PROVINCIALISMS.

Miss Fox's List.

1. **APPLEDRANE.*** A wasp.
2. **APS.*** An abscess.
3. **ARRISHES.*** Stubbles.

Mr. Marshall's List.

1. **APPLE-DRONE.*** Wasp; the ordinary name. [Rather *apple-drain*; *drons* I never heard.—J. S.]
3. **ARRISHES.*** Stubbles.
4. **ARRISH-MOWS.*** Field stacklets. In a late harvest and in a moist climature, like that of West Devonshire and Cornwall, especially after a wet summer, which seldom fails of filling the butts of corn-sheaves with green succulent herbage,—securing the ears from injury, and at the same time exposing the butts to the influence of the atmosphere, is, self-evidently an admirable expedient. The size of *Arrish-mows* varies. Those which I have observed, generally contained about a waggon-load of sheaves. But they are made of any size, from a shock of ten sheaves to a load. The method of making them is this: a sort of cone, or rather square pyramid being formed with sheaves and set upon their butts, and leaning towards the centre, the workman gets upon them on his knees; an assistant putting sheaves, in their proper places, before him, while he crawls round the “mow” treading them, in this manner, with his knees applied about the banding place; and continuing thus to lay course after course, until the *mow* be deemed high enough: observing to contract the dimensions as it rises in height, and to set the sheaves more and more upright, until they form, at the top, a sharp point, similar to that of nine

Miss Fox's List.

6. BANGER.* Large.
7. BARKER.* A whetstone.

Mr. Marshall's List.

sheaves set up as a shock; and like this it is capped with an inverted sheaf, either of corn or of "reed:" the principle and the form, when finished, being the same in both; namely, a square pyramid.

5. BALLARD.* A castrate ram.
7. BARKER.* A rubber, or whetstone.
8. BARTON.* A large farm. A name which perhaps was originally given to demesne lands, or manor farms, but which now seems to be applied to any *large* farm in contradistinction to the more common description of farms.
9. BEAT.* The roots and soil subjected to the operation of 'burning beat.' *Burning beat*, answering to the paring and burning, or more technically, sod burning of other districts. This operation in agriculture has been practised in this western part of the island from time beyond which memory nor tradition reaches. . . . In an old tract which I saw some years ago in the British Museum, this operation is termed *Devonshiring*, and it is to this day called *Denshiring* in different districts. [To *Devonshire* ground is a proverb mentioned in Fuller's *Worthies*, under *Devonshire*.—J. S.]
10. BEATING-AXE* [*now generally called bidiks*]. See as above. There are at present three distinct methods of separating the sward or sod—provincially the *spine*—from the soil. The one is performed with a *Beating-axe*—namely, a large adze—some five or six inches wide, and ten or twelve inches long; and somewhat hollow or dishing. With this, which was probably the original instrument employed in the operation, large chips, shavings, or sods are

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13. BELVING.* Bellowing.
15. BIDDIX.* An axe.
16. BIVER.* To quiver. "Bivering with the cold."
17. BLAB.* To tell.
19. BOWERLY.* Comely. "A fine bowerly woman."
20. BRAAVE.* Good, or large. "A braave catch of fish."
21. BRISA.* Small twigs from a wood rick used for lighting fires.
22. BULDERRY.* Sultry. "Bulderry weather."
28. CATTEBALL.* A ball (such as children play with).
29. CAUCH.* A mixture.

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- struck off. . . . In using it, the workman appears to the eye of a stranger at some distance, to be *beating* the surface, as with a beetle, rather than to be chipping off the sward with an edge-tool. This operation is termed *hand-beating*.
11. BEEN.* A with, withey, or band; a twisted twig.
 12. BEESOM, BIZZOM,* *Spartium scoparium*, the broom plant: hence a name of the sweeping-broom of the housewife.
 14. BEVERAGE.* Water cider, or small cider.
 18. BLIND-NETTLE.* *Galeopsis tetrahit*. Wild hemp.
 23. BURROW.* A hillock or heap; as *stone-burrows*, *beat-burrows*: hence, probably, *Barrow*, tumulus. [*Barrow* is used near Plymouth for a heap of stone.—J. S.]
 24. BUSS.* A grass calf. Perhaps originally *bosses*, or wood-calves (in contradistinction to house-calves); namely, calves suffered to run with their dams, in the woods or forest-lands.
 25. BUTT.* A close-bodied cart; as *dung-butt*, or wheel-cart: *gurry-butt*, or sledge-cart: *ox-butt*, *horse-butt* [*slide-butt*].
 26. BUTT-LOAD.* About six seams.
 27. CADDEL,* *Heracleum sphondylium*, cow-paranip.

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- 31. CHAINY.* China.
- 32. CHAUK.* A jackdaw.
- 34. CHEWERS.* Odd jobs.
- 35. CLADGY.* Waxy. "Cladgy potatoes."
- 37. CLEVER.* In good health.
- 38. CLITTY.* Close. "Clity bread."
- 39. CLOME.* Earthenware.
- 40. CLOUT.* A blow. "A clout on the ear."

- 43. COIN.* "A female crab."

- 48. CREEMED.* Shivering.
- 49. CRICKLED.* Gave way.
- 50. CRIS HAWK.* A kestrel.

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- 30. CESS, ZESS.* A mow, in a barn.
- 33. CHEESE.* The pile of pomage in making cider.
- 36. CLAW-ILL.* The foul, in cattle.
- 41. CLOWTED CREAM.* Cream raised by heat. See *Raw* and *Scald* cream.
- 42. COB, COBWALL.* Mudwall.
- 44. CONVENTIONARY RENT.* The reserved rents of life leases.
- 45. COOMB.* A narrow meadowy bottom; generally, or always, between hanging woods.
- 46. COURTLAGE.* Farm-yard. [Or the yard, whether paved or unpaved, of a house in town or country.—J. S.]
- 47. COUSIN BETTY.* A female changeling, real or counterfeit, who goes about the country to excite charity, as she does in Yorkshire under the same name!
- 51. CROOKS.* A furniture of pack-horses. The furniture of pack-horses varies with the load to be carried. Hay, corn, straw, faggots, and other comparatively light articles of burden, are loaded between *crooks*; formed of willow poles, about the thickness of sithe-handles, and seven or eight feet long, bent as ox bows, but with one end much longer than the other. These are joined in pairs, with slight cross-bars, eighteen inches to two feet long; and each horse

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is furnished with two pair of these *crooks*, alung together, so that the shorter and stronger ends shall lie easy and firmly against the pack-saddle; the longer and lighter ends rising, perhaps, fifteen or more inches above the horse's back, and standing four or five feet from each other. Within and between these *crooks* the load is piled and bound fast together. See *Pots*.

52. CROPE.* Crept.

53. CROW-BAR, BAR-IRE.* An iron crow.

54. CROWNIN.* Coroner's inquest.

55. CRUEL.* Very. "Cruelgood."
"Cruel kind."

56. CRUNE.* To whine.

57. CULVERS.* Pigeons.

58. CULVER-HOUSE.* Pigeon-house or dove-cot.

59. DASHED.* Daunted.

60. DASHELS.* *Cardui*, thistles (the ordinary name).

61. DASHFUL.* Bashful.

62. DAVERED.* Withered.

63. [DENSHIRING.* See *Beat*.]

64. DERNS.* The woodwork around a door.

65. DICELS.* Thistles.

66. DIMMET.* Twilight.

67. DISHWASHER.* A wagtail.

68. DOLLY-MOPPIN. An idler; a lazy fellow.

69. DOUST.* Chaff.

70. DRAGS.* Large harrows.

71. DRANG.* A ditch.

72. DRASHEL.* A flail.

73. DRASAKING. Slow; lagging behind.

74. DRATCH.* Thatch.

75. DRAW.* To carry or convey hay or corn on a waggon or sledge: most proper. See *Dray*. [The verb is also *dray*, not *draw*.—J. S.]

76. DRAY.* A sledge, for light produce, as hay or straw; query—a corruption of *draw*?

77. DRESKAL.* Threshold.

78. DRINGLE.* A throng, or crowd.

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80. DUMPS.* Melancholy.
 81. DWAM.* Sleepiness. "A bit of a dwam."

85. EVIL.* A three-pronged agricultural implement.

90. FLOSHED.* Spilt, splashed.
 91. FRAPE.* To bandage tightly.

94. FURSE-CHAT. A stonechat.

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79. DRUDGE.* A large team-rake. The *drudge* is an implement peculiar, I believe, to this part of the island. It is a long, heavy, wooden-toothed rake; with the teeth broad, and set with the flat side foremost; drawn by oxen or horses, and used to collect the fragments of sward loosened by the plough and harrow, for the purpose of burning it.

82. EARTH-RIDGES.* *Earth-ridges* are formed in the field, either with mould hacked from the borders of it, or with the soil of the area raised with the plow. The earth thus raised is broken into small fragments, and formed into long narrow beds. Upon these *earth-ridges* the stone lime is laid, and covered up with the outskirts of the beds.

83. EAVER.* *Lolium perenne*, ray grass.

84. -ETH is in common use, as the termination of the third person singular: *hath*, *doth*, are also in ordinary use. [More often -*th*, e.g. [*kumth*] for *cometh*, [*goath*] for *goeth*, [*runth*] for *runneth*. —J. S.]

86. FAIRIES* (pronounced *Vairies*). Squirrels. [Not the squirrel, but the polecat.—J. S.]

87. FERN-WEB.* *Scarabæus horticola*, a small chaffer, injurious to the fruit of the apple-tree while very small.

88. FETTER-LOCK.* Fetlock of a horse; by corruption, perhaps, [of] footlock.

89. FLAP-DOCK.* *Digitalis purpurea*, fox-glove.

92. FRENCH NUTS. Walnuts.

93. FRITH.* Brush-wood.

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95. GALAGANTIN.* Large and awkward.
96. GALE.* A castrate bull.
97. GALLIED. Frightened.
98. GAWK.* A stupid person.
99. GLAMED.* Hurt.
100. GLUMPING.* Sulking.
101. GOLDEN GLADDY. A yellow-hammer.
102. GRAIL.* Offal of grain.
103. GRAINY.* Proud; ill tempered.
104. GREENSIDE.* Grass, turf, green-sward.
105. GREY-BIRD.* The thrush, no doubt in contradistinction to the black-bird, both being birds of song, and nearly of the same size; a simple, apt distinction.
106. GRIDDLE.* A gridiron.
107. GRIZZLE.* To grin.
108. GRUCHY.* To shrink under sudden pain.
109. GRUTE.* Earth.
110. GRUTE-FIELD.* A ploughed field.
111. GULGING.* Drinking.
112. GULK.* To swallow.
113. GURRY-BUTT.* Dung-sledge. The *gurry-butt*, or *dung-sledge*, of Devonshire, is a sort of sliding cart or barrow, usually of a size proper to be drawn by one horse: sometimes it is made larger; . . . the sides and ends are about eighteen inches high, and are fixed, the load being discharged by overturning the carriage. See *Butt* and *Slide-butt*.
114. HACK.* A one-ended mattock.
115. HAM-TREES.* Haines.
116. HAM-WARDS. Straw or rush collars for horses.
117. HAND-BEATING.* See *Beating-Axe*.
118. HAND-REAPING.* Ordinary reaping, contradistinct from *hewing*.
119. HATCH.* Half door of a cottage.
120. HAUL-TO.* Three-tined dung-drag.
121. HEAL.* To cover as with slates.

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123. HEDGABOOR.* A hedgehog.

132. HOMESCREECH.* Missel thrush.
-
133. HOOD.* Wood.

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122. HEALING, HELLING.* The slate covering of a roof; also the operation of slating.
124. HELLIER.* A slater.
125. HERBERY.* A cottage-garden, or herb-garden.
126. HEWING.* A method of cutting wheat. This is a kind of mowing with one hand. The *yowing-hook* is formed much like the common sharp-edged hand-reaping hook of this and other places, but somewhat larger every way—longer, broader, and stouter, with a hooked knob at the end of the handle to prevent its slipping out of the hand. With this instrument, the corn is struck at, horizontally, and almost close to the ground, with the one hand; while the other hand and arm *strikes* it at the same instant, about the middle of the straw, thus driving it, upright, against the standing corn: the workman taking a sweep round as much as will form a sheaf, and collecting the whole together in the centre into a sort of leaning cone; finally striking the hook under its base to disengage it entirely from the soil, but still supporting it with the left or loose arm and the leg, until the hook be put beneath it to lift it, horizontally, to the band. . . . This practice is not peculiar to the West of England; it has long been in use in Kent and Surrey.
128. HINE.* Bailiff, or farm-steward. [The word is generally written *hind*, though pronounced *huyn*.—J. S.]
129. HOG-COLTS.* Yearling colts.
130. HOGS.* Yearling sheep.
131. HOLM.* [Hoam or hoamen-tree.] *Ilex aquifolium*, holly.

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134. HOODWALL.* A green wood-pecker.
135. HOOP.* A bullfinch.
136. HOOST.* Hoarseness.
137. HORSE - LONG - CRIPPLE.* A dragon fly.
138. ICYBELLS. Icicles.
139. JACKYBREAD, or JACKYLO'. Currant cake.
140. JOLTERHEAD.* Blockhead.
141. JUNCATE, JUNKET.* Coagulated milk eaten in the undisturbed state of coagulation, with sugar, spices, and clouted cream.
142. KEEZER.* A sort of sieve.
143. KICKETH.* Stammers.
144. KIT.* All large hawks and falcons are thus designated.
145. LEAD.* To carry trusses on horseback. Formerly it seems, loose corn which had been cut with the sithe, was led in "trusses" or large bundles, each with a horse-load bound together with two ropes, and laid across a "pannel" or pad-saddle, and steadied or led by a woman or youth from the field. This was called *truss-leading* or *lead-ing*—a term which is common at this time, in the North of England and in Scotland for carrying, hauling, or drawing hay, corn, or other article on a carriage. See *Draw*.
146. LEAR, LEARY.* Empty, as an unloaded cart or waggon.
147. LEAT.* An artificial rill, rivulet, or brook. . . . This artificial brook [Plymouth *Leat*. W.P.] is taken out of the river Mew, towards its source, at the foot of Sheepstor Tor, in a wild mountain dell. *Leat*, *Late*, or *Lake*, as it is sometimes pronounced, is perhaps a corruption of *lead* or conductor, being applied, I believe, to any artificial channel for conducting water.
148. LENT-ROSE* (pl. *lent-rosen*). The narcissus or daffodil.
149. LERRAPIN.* Large, straggling.
150. LERRIP.* Chastise. "I'll lerrip that boy."

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151. LEW.* Sheltered.
 152. LINHAY.* An open shed.
 153. LODYHOLT.* A disease in a cow's foot.
 154. LONGCRIPPLE.* A lizard.
 155. LONG-TAILED PIE. Long-tailed tit.
 156. LOP.* Lame.
 157. LOWSTER.* To work hard. "He can't lowster as he used to do."
 158. MAGAMER.* Nonsense.
 159. MAKE WISE.* Make believe.
 160. MALKIN.* A dirty person.
 161. MALLIN.* A beating.
 162. MANCHE.* To chew, to eat.
 164. MAURS. Roots.
 165. MAWL.* To break or bruize.
 166. MAZED.* Mad, deranged.
 168. MIFT.* Offended.
 170. MOODY.* Low-spirited.
 171. MOOSTER. To stir. "Time to mooster."
 172. MOOT.* To root out.
 173. MOPT.* Blindfolded
 177. MULLEY.* A donkey.
 178. NEARTR.* Nights.
152. LINHAY.* An open shed.
 163. MASTS, MESS.* Acorns.
 166. MAZED.* Silly, idiotic.
 167. MELL. To mix, as lime and earth.
 169. MOCK.* Pomage, or ground fruit.
 174. MORES.* Roots, whether of grass or trees. (The ordinary name).
 175. MOW.* A rick or stack.
 176. MOWHAY.* Stackyard.
 179. NECESSITY.* A base kind of spirit. A vile spirit which is drawn, by the housewives of Devon, from the grounds and lees of the fermenting-room. These dregs are distilled (of course illegally) by means of a porridge-pot, with a tin head fixed over it, and communicating with a straight pipe, passing through a hogshead of water; the liquor being passed through this imperfect apparatus. It, of course, comes over extremely empyreumatic; and is drank in a recent state, under the appropriate name of *necessity*.

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180. NINPINGANG.* A boil on the finger.

181. NOBT.* Nothing.

184. OPT. Ought.* "You didn't oft to do so."

185. OLD SODGER.* A deceitful person.

186. OMES.* Alma.

189. ORGANS.* Penny royal.

190. ORTS. Fragments, refuse.

192. PANKING.* Panting.

194. PICKING EARS. Gleaning.

195. PIG'S LOOSE.* Pig's sty.

197. PILEM.* Dust.

198. PINDY.* Mouldy, kept too long. "The meat is pindy."

182. NOT, KNOT.* Polled as sheep. [Knot is bad spelling.]

183. OAK-WEBB.* *Scarabæus melolontha*, the chaffer or may-bug.

187. ORDAIN.* To order.

188. ORDAINED.* Intended. (Common.)

191. OVERLAND FARM.* A parcel of land, without a house to it.

193. PASSAGE.* Ferry. The ordinary name.

196. PIKE, PEEK, PICK.* A prong or hay-fork. Query—analagous with war-pike? [Yes.]

199. PITCH.* To fling sheaves upon a stack or mow. The sheaves being left upon the ground . . . are *flung*, provincially pitched, from the point of a prong formed very narrow in the tines, over the head of the *pitcher*, a boy placing the sheaves fairly before him. I have seen a man thus pitching sheaves up to the roof of a stack above the ordinary height, throwing them several feet above the reach of his fork. The spring is got by the arms and the knee jointly; or is done at armslength. When the height is very great, or the sheaves heavy, two men's exertions, it seems, are joined: one man placing the tines of his pike under the "stem" or handle of the other! Much probably depends on the forming of the tines of the prong; they contract up-

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200. **PIXIES.*** Fairies.
202. **PLASHET.*** A quagmire.
203. **PLIMMED.*** Swelled.
205. **PLUM.*** Light, soft.
206. **POOK.*** A rick. "A haypook."
207. **POSSES.*** Posts.
211. **POWER.*** A great number.
"A power of people."
212. **PUCKER.*** A fuss.
213. **QUALING.*** Fainting.
214. **QUARRELS.*** Panes of glass.
215. **QUELTERING.*** Hot.
216. **RAKED UP.*** Awoke from sleep.
217. **RARE.*** Early.
218. **RASH.*** Rough-handed.

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- wards to an acute angle; the sheaves, of course, part from them with a degree of spring, given by the straw compressed between them.
201. **PLANSHER.*** A chamber floor. [The word is *plansten*; *plansher* I have never heard.—J. S.]
204. **PLOW.*** A team of oxen.
205. **PLUM.*** Light and puffy, as some soils. [Also *plim*, for anything light and puffy.—J. S.]
206. **POOK.*** A cock of hay.
208. **POTS.*** Furniture of pack-horses. Dung, sand, materials of buildings, roads, &c., are carried in *potts*, or strong coarse panniers, slung together, like the *crooks*, and as panniers are usually slung; the dung, especially if long and light, being ridged up, over the saddle. The bottom of each pot is a falling door, on a strong and simple construction. See *Crook*.
209. **POTWATER.*** Water for household purposes.
210. **POUND-HOUSE.*** Cider manufactory. The apples being thrown into a large trough or tub, five or six persons, standing round the vessel, *pounded* them with large club-shaped wooden pestils, whose ends are guarded and made rough . . . with the heads of nails. Hence no doubt the epithet *pound* is applied to the house, &c., in which the whole business of cider making is performed.

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220. REAM.* The cream on the surface of new milk.
 221. REAMED.* Stretched.

219. RAW CREAM.* Cream raised in the natural way, not scalded or clouted. See *Clouted Cream*. [Always called *ream* [reem], or *raw ream*. Cream is applied only to scalded cream.—J. S.]

222. RED HAY.* Mow-burnt hay; in distinction to "green hay," or hay which has taken a moderate heat, and to "vinny hay," or that which is mouldy.
 223. REED.* Unbruised straw, of wheat or rye.
 224. ROO.* Rough.

225. ROBY TORY.* Tawdry.
 226. ROUSE.* With a great noise.
 227. RUFF.* Roof.
 228. RUSY-BOAT. A swing.
 229. SCAD or SCUD. A Shower. "A frisky scad."

230. SCALD CREAM.* Cream raised by heat, "Clouted cream."

231. SCOVY.* Uneven in colour. "This dyed shawl is scovy."
 232. SCRIMMAGE or STRIMMAGE.* A commotion.
 233. SCRIMPING.* To deal out begrudgingly.
 234. SCUTE.* A gift.

235. SEAM.* A horse-load, or three hundred weight.
 236. SEWL, SULE.* Pronounced *sule* [zeol or zuel], a plow (the only name). See *Plow*.
 237. SHEEDWOOD. Rough poles of topwood.

238. SHEERYMOUSE.* A bat.
 240. SIGHT.* A great quantity. "Such a sight of pilchards."

239. SHIPPEN.* An ox-house.

241. SKIRTING.* For *skirting*, the common share is used, but made perhaps somewhat wider than when it is used in the ordinary operation of plowing. In this mode of using the plow, little more than half the sward is pared off; turning the part raised upon a line of unmoved turf. . . The paring of turf in this case is from one to two

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242. **SKIVER.** A skewer.
244. **SLAMMED OF STREAMMED.***
Shut with violence.
247. **SLEWERED AWAY.*** Gave way.
249. **SLOOK.*** To entice. "My dog
was slooked away."
250. **SLOTTERING.*** Dirty, wet.
252. **SMEECH.*** Offensive smell in
the fire.
253. **SMEERED.*** Smiled.
259. **SPOIL.*** Strength. "I've
no spoil left in me."
260. **SQUAT.*** Pressed, or squeezed.
261. **SQUEAKED.*** Spoke. "He
never squeaked a word of it."
263. **STAG.*** A young cock.
265. **STEWER.** Dust.
266. **STEWARDLY.*** Managing. "A
good stewardly wife."
268. **STRAM BANG.*** To fling
violently.
269. **STROIL.*** Grass weeds.

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- inches thick on the coulters
margin, decreasing in thickness
to a thin feather edge by which
it adheres to the unmoved
sward. [This is part of the
operation of sod burning.]
243. **SKOVER.*** Reaps, shoves, grips,
or bundles, of corn; unbound
sheaves.
245. **SLAP-DASH.*** Rough-cast, or
liquid coating of buildings.
246. **SLAT-AXE.*** A mattock with a
short axe-end.
248. **SLIDE-BUTT.*** Dung - sledge.
See *Gurry-butt*.
251. **SMALL.*** Low, as the water of
a river, &c.
254. **SOUANT.*** Fair, even, regular.
(A hackneyed word.)
255. **SPADE.*** To pare or breast-
plow.
256. **SPARS.*** Thatching rods.
257. **SPINE.*** Turf, sod, sward. See
Beating-axe.
258. **SPIRE.*** *Arundo*, a reed.
262. **STAFF.*** A measure of nine
feet, half a customary rod.
264. **STEM.*** The handle of a fork.
267. **STICKLE.*** Steep, as a road;
or rapid, as a stream.
270. **STROLL.*** A narrow strip of
land.

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272. **SUENT.*** Even, smooth.

274. **SWAP.*** Exchange.

275. **SWELTER.*** To melt.

276. **SWINGING.*** Huge.

277. **TANTARA.*** A disturbance.

278. **TANTAREMS.*** Vagaries.

279. **TEEL.*** To set. "Teel potatoes." "To teel a trap."

280. **THICKA.*** That.

281. **THICKER.*** This.

282. **TIDLY GOLDFINCH.*** A gold crested wren.

283. **TIDLY TOPE.*** A wren.

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271. **STROYL.*** Couch, or other weeds.

273. **SURVEY.*** A sort of auction. The disposal of farms for three lives is generally by what are provincially termed *surveys*, a species of auction, at which candidates bid for the priority of refusal, rather than for the thing itself; a species of sale common to every species of property. If the highest bidder does not reach the seller's price, the bidding is inconclusive; the seller names his price, and the highest bidder has the first option of choice or refusal. If he refuse, the next highest bidder takes his choice, and so of the rest.

284. **TILL.*** To sow and harrow in the seed, to seminate.

285. **TONG-TREE.*** The pole of an ox cart, or waggon.

286. **TOR.*** A ragged pointed hill; as *Brent-Tor*, *Roo-Tor*, *High-Tor*.

287. **TORMENTING.*** Sub-hoing or sub-plowing. *Tormenting* is performed with a sub-plow of many shares, which are fixed in a triangular frame, supported by wheels; these shares or sub-hoes, working a few inches beneath the surface the tormenting being done previously to the plowing, for which it is an admirable preparation, as not only separating roots of weeds, but breaking the soil, and rendering it the more obedient to the harrow.

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288. TOTLING.* Working slowly.
 289. TRAFFIC.* Trash. "Don't tell me sich traffic."
 290. TRAPES.* A slatternly woman.
 292. TROUNCE.* Punish.
 297. UNRAY.* To undress.
 299. VANG.* To take money.
 301. VBOE.* A journey.
 304. VINNY.* Mouldy (applied to cheese).
 305. VISTERS.* Fists.
 306. VITTY.* Suitable, neat.
 307. VORE.* Stand forward. "To the vore."
 310. WARMING.* Beating. "He gave him such a warming."

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291. TRONE.* Trench or drain.
 293. TRUSSES.* Bundles of corn or straw, to be led on horseback. [See *Lead*.]
 294. TUCKER.* Fuller.
 295. TUCKING-MILL.* Fulling-mill.
 296. TURF.* Peat.
 298. VAGA. Turves, for fuel. Query. —a corruption of flags!
 300. VAT.* The bed of the cider-press.
 302. VELL.* For *velling*, the share is made wide, with the angle or outer point of the wing or fin turned upward, to separate the turf entirely from the soil. [Part of the operation of sod-turning.]
 303. VETTY.* Apposite, suitable; opposed to *Wish*, q.v. [Better spelt *vitty*.]
 304. VINNY.* Mouldy.
 308. VORRAGE. Earth collected for melling with lime.
 309. WANTS.* Moles.
 311. WHITAKER.* A species of quartz. Intermixed with the soil, and often united with fragments of slate rock, is found, in blocks and fragments of various sizes, a species of crystal or quartz—provincially whittaker—which in colour is mostly white, sometimes tinged with red or rust colour.
 312. WHITE WITCH.* A good creature which has the power of counteracting the evil designs of *Black* witches. Such kind spirits formerly were found in

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Yorkshire, and are still spoken of there by the same name, [The *white witch* is not a spirit, but a human being, man or woman, who affords help to those who are "ill-wished."—J. S.]

313. WINDELL.* A redwing.

314. WISHT.* Dismal, melancholy. 314. WISH.* Inapt, bad, unfit, as "wish weather," or any "wish thing," as a stone or piece of timber ill-suited to the purpose for which it is applied or required (another hackneyed epithet). See *Vetty*.

315. WISHTNESS.* A sort of ghost.

316. WISTER CLISTER.* A box on the ear.

317. YARK.* Sharp witted.

318. YAWS.* Ewes.

319. YOKE OF OXEN.* A pair of oxen.

320. YOWING.* See *Hewing*.

321. YOWL.* Howl.

322. ZAMZAWED.* Over boiled, over done.

323. ZOG.* A doze. "A bit of a zog."

III.—NOTES.

1. APPLE-DRANE is used about Ashburton and Torquay.*

Wolcot—"Sting'd by *Apple-dranes*." *Roy. Vis.*

Palmer—"You dunderheaded stunpole, you drumble *drone*."

p. 28.

[I have heard APPLE-DRONE, but less frequently than APPLE-DRANE, about Looe in E. Cornwall; and always understood *Drane* to be a vulgar pronunciation of *Drone*. In my boyhood our entomological knowledge about Looe was by no means considerable, but we recognized the *Drane* = *Drone* = *Male Bee*; the *Apple-drane* = *Apple-drone* = Wasp, sometimes called *Waps*; and the *Drumbl-drane* = *Drumbl-drone* = *Humble Bee*. All preachers, or other speakers or readers, having a monotonous delivery were termed *Drumbl-dranes*, and especially if they were thought to be not very clever. W.P.]

Couch—"APPLE-DRANE. The wasp."

* [When it is remarked of a word that it is used about Ashburton, or Torquay, without further remark, it is to be understood that the sense in which it is used there, is the same as that in which it is used according to Miss Fox, or Mr. Marshall, as the case may be. W.P.]

[A servant girl in my house, a native of Prawle, S. Devon, calls *Humble Bees*, *Apple-dranes*; and *Wasps*, *Wasps*. W.P.]

2. *APS* is used about Ashburton and Torquay.

N. & Q.—"APSE is with us [Bodmin, Cornwall, W.P.] an evident corruption of abscess." 2nd S. iii. 240.

3, 4. *Perry*—"EDDISH. Stubble; latter grass."

"ARRISH" and "ARRISH-Mows" are used about Ashburton and Torquay.

Palmer—"Tramping away across the *arish*." p. 17.

Rock—"Torned pegs ta *arish*." p. 13.

Pulman—"ARRISH, EDDISH. Stubble ground fit for the plough."

Moore—"ARRISHES. Stubbles. ARRISH MOWS. Field stacklets."

Vancouver—"The wheat *arish* or stubble." p. 107. "The oat *arish* or stubble." p. 179. "Clearing the [pease, W.P.] *arish*." p. 184.

["ERRISH" and "ERRISH-Mow," are used about Looe. W.P.]

Couch—"ERRISH. Stubble. Tusser, who was a native of Essex, writes it EDISH.

'Seed first go fetch,
For *edish* or *etch*.
Soil perfectly know,
Ere *edish* ye sow.'

Garland—"ARRISH. Stubble field."

Bannister—"ARISH PARK. Stubble (*arish*, Modern Cornish) field."

Mon. Mag—"ARRISH. Stubble; wheat arrish, *wheat-stubble*. C. ERISH. Perhaps from the Spanish *Era*. 'The corn in Spain is trodden out of the ear by mares in the field where it grows, on a circular spot, called *Era*.'" See *Carter's Journey*, vol. ii. p. 103. EDISH. Stubble (Saxon).

Duncumb—"PEAS-EDDIS. Peas-stubble." *Eng. Dial. Soc.* b. 12.

Parish—"EARSH. A stubble-field; as a wheat *earsh*, a barley *earsh*—frequently pronounced *ash*."

Ray, S. E.—"ERSH. The name that [is also called] *edish*, the stubble after the corn is cut. *Suss.* *Edisc* is an old Saxon word signifying sometimes *roughings*, *aftermathes*." *Eng. Dial. Soc.* B. 16.

Thoresby—"FOG or EDISH. Is the second growth of grass (after mowing)." *Eng. Dial. Soc.* B. 17.

Ray, N.—"EDDISH. Roughings, ab. A.S. *edisc*, gramen

serotinum, et hoc à præp. loquelari A.S. ed, rursus denno, q.d. gramen quod denuo crescit. *Skinner.* *Eng. Dial. Soc.* B. 15.

Halliwell—ARRISHES. According to Marshall's Rural Economy, i. p. 171, this is the Devonshire term for stubbles or *edish*. ARRISH MOWS, which he mentions as little stacks set up in a field, seem to be so called merely from their being in the *arrish*, or stubble-field. "EDDIGE. The aftermath. *Derbysh.*" "EDDISH. Another form of *eddige*, but more properly the stubble in corn or grass." "EARSH. A stubble-field. *South.*"

Grose—"EDDISH. Roughings. *North.*" Ground whereon wheat or other corn has grown the preceding year; called in *Norf.* and *Essex* an *etch*. Also in the *North.* *aftergrass*.

[*Errish-Mows* are sometimes called *Wind-mows* in Devonshire. Of course Tusser, in the lines quoted by Mr. Couch, used *edish* and *etch* to signify *after-grass*. W. P.]

5. *Halliwell*—"BALLARD. A castrated ram. *Devon.*" The word occurs in an obscure sense in *Reliq. Antiq.* ii. 56.

"VALLARD" is used about Ashburton.

6. "BANGER" is used about Ashburton and Torquay.

Baird—"I'll write thur, deer Jan, a *banging* girt letter." i. 8.

Lock—"BANGING. Large, great."

Pulman—"BANGIN. Large."

["BANGER" and "BANGING"—Noun and adjective—are used about Looe. W. P.]

Tregellas—"BANGER. A large one." "Ean't he a *banger*." *Tales*, p. 50.

Mon. Mag.—"BANGING. Very great."

Halliwell—"BANGER. A large person. *Var. dial.* A hard blow. *Salop.* A great falsehood. *Warw.*" "BANGING. Great, large. *Var. dial.*"

Grose—"BANGING. Great, large. *South.*"

7. BARKER is used about Ashburton and Torquay.

Rock—"BARKER. A whetstone for scythes."

Moore—"BARKER. A rubber; a whetstone."

Jennings—"BAWKER. BAWKER-STONE. A stone used for whetting scythes; a kind of sand-stone."

Halliwell—"BARKER. A whetstone; a rubber. *Devonsh.*"

8. *Perry*—"BARTON. The demesne lands of a manor. The enclosure for the bear or crop."

"BARTON" = A large farm, is used about Ashburton and Torquay.

Bowring—[Speaking of the names of places in Devonshire. W. P.] "We have 23 *Bartons*, the ancient meaning of which was the farm or outhouses attached to larger seats or properties. The word is Anglo-Saxon—*Bere-tun*, and is found in Todd's Johnson." *Trans. Devon. Assoc.*, 1866, p. 35.

Rock—"BARTIN or BARTON. A large farm." "Layv'd behind ta *Bartin*." p. 19.

Whyte-Melville—"In and out of the house and through the precincts of the farm-yard or *barton*, as he [Gale, an Exmoor clergyman. W. P.] called it." p. 142.

Pulman—"BARTON (Perhaps from the Anglo-Saxon *bere*, barley; and *tun*, an enclosure). A farm-yard."

Moore—"BARTON. A large farm, or demesne."

Barnes—"BARKEN. A.S. *Beor*, barley or barley straw, and *tun*, a yard. A yard or *barton*, as a rick *barton*, or cow *barton*."

[I remember a very large field, probably the largest on the estate, which had several of great size, in the immediate neighbourhood of Looe, which was always termed *The Barton*. W. P.]

Couch—"The *barton* of West Lansallos. . . . Hall *barton* also extends into this parish." p. 59. "The *barton* of Hendersick is now a farm." p. 80.

Bannister—"BARTON. The demesne lands of a manor. The enclosure for the *beor* or crop."

Cooke—"BARTON. A large demesne."

Parish—"BARTON [*Bere-tun*, Ang.-Sax., a court-yard]. The demesne lands of a manor. The manor-house itself. More frequently the outhouses and yards."

Ray, S. E.—"BARKEN, or (as they use it in Sussex) BARTON. A yard of a house, a backside. [Ray quotes Skinner's derivations of *barken*, viz. from vb. to *bar*, or from A.S. *beorgan*, or from A.S. *bere*, barley. It is clearly A.S. *bere-tun*. N.B. Skinner notes the form *barken* as *Wilts*]. " *Eng. Dial. Soc.* B. 16.

Halliwell—"BARTON. The demesne lands of a manor; the manor-house itself; and sometimes, the outhouses and yards. Miede says 'a coop for poultry,' and Cooper translates *cohors* 'a *barton* or place inclosed wherein all kinde of pultrie was kept.' In the Unton Inventories, p. 9, pigs are mentioned as being kept in a *barton*."

Groce—"BARKEN. A yard of a house, backside, or *barton*." "BARTON. A yard of a house, or backside. *Sussex*."

Prince—"Sold the house and good part of the *barten* and mannor." p. 137. "The enlargement of his *barton*." p. 138. "Merland, a *barten* house in the parish of Padstow." p. 287.

9. "BEAT" is used about Ashburton and Torquay.

Rock—"BEAT. Peat; the spine or turf."

Lock—"BEAT, or PEAT. Turf burnt for the improvement of cold land, commonly called *burn-beating*."

Vancouver—"Beat-burnt lands." p. 461. [The cob build-ings of the county being] "left without rough-cast, or white-wash, to conceal the native colour of the loam, it is utterly impossible, at a distance, to distinguish them from a *beat-field*, both having uniformly the same shade; and from both of which the stranger perceives smoke issuing." p. 92.

["BURNING-BEAT" and "BEAT BURROWS" are used about Looe. W. P.]

Couch—"BEAT-TURF. BEAT-BURROW. A heap of burnt turves."

Bannister—"BEATON. Peat Down." "BEAT PARK. Peat Field."

Carew—"A little before ploughing-time they scatter abroad those *beat-boroughs*." p. 19.

Mon. Mag.—"BEET. To make or feed a fire, *C*. To pare off the turf in order to burn it, *C. D*. Turf pared off ready for burning, *C. D*."

Hutton—"BEET. To make or feed a fire." *Eng. Dial. Soc.* B. 1.

Willan—"BEET. To put on fuel; to supply the gradual waste of anything." *Eng. Dial. Soc.* B. 7.

Burns—
 "It warms me, it charms me,
 To mention but her name :
 It heats me, it *beets* me
 And sets me a' on flame."

[*First*] *Epistle to Davis*, st. 8.

"Perhaps 'Dundee's' wild warbling measures rise,
 Or plaintive 'Martyrs,' worthy of the name ;
 Or noble 'Elgin' *beets* the heavenward flame."

Cottar's Saturday Night, st. 13.

"May Kennedy's far-honoured name
 Lang *beet* his-hymeneal flame."

Dedication to Gavin Hamilton, lines 100-101.

"Its plenty *beets* the lover's fire."

The Country Lassie, st. 2.

Halliwell—"BEAT. Peat. *Devon*." "BEAT - BURNING. Denshering." "BURNBEKING. Denshering land, burning turf

for its improvement. 'Mr. Beshop of Merton first brought into the south of Wiltshire the improvement by *burnbaking*, Denshering, about 1639. *Aubrey's Wilts, Royal Soc. MS.* p. 287."

Groce—"BEET. To make or feed a fire. *North*."

Chaucer—"On thine altar, where I ride or go,
I will do sacrifice and fires *bete*."

Knight's Tale, lines 2255-6.

"Two fires on the altar 'gan she *bete*."

Ibid, l. 2294.

10. [See BIDDIX in Miss Fox's List. W. P.]

"BEATING MATTOCK" is used about Ashburton; and "BEATER," about Torquay.

Barnes—"BEAT-PLOUGH. A turf-cutting tool, consisting of a broad blade with a T-frame, and driven by a man's breast."

Mon. Mag.—"BEET-AXE. The instrument used in *beeting* ground, in *burn-beeting*, or *denshering*."

11. "BEEN" is used about Ashburton and Torquay.

Rock—"BEEN. A band or twisted twig."

Moore—"BEEN. A withey, a band; or twisted twig."

["BEEN" is used about Looe. W. P.]

Couch—"BEAN. A withy band."

["BEEN" perhaps originated thus:—BIND (a band, see Perry) was pronounced *Beend*, which, by the elision of the d, became *Been*.

Most persons have heard the *i* in certain words pronounced as if it had been *e*. An eminent statesman is said to use *obleeged* instead of *obliged*, and this was the practice of a late distinguished geologist. The following examples will show that the habit of so pronouncing *i* is common in Devonshire:—"Like a yung *cheel*" (= like a young *child*), *Baird*, i. 14. "If I'de a *cheeld*," *Palmer*, 51. "Tha cocker'd *cheeld*," *Rock*, 29. "Natur's *cheeld*," *Pulman*, 33. "Avore tha *cock-leart*" (= before the cock-light, or daybreak), *Rock*, 4. "Zoon arter *cockleert*," *Baird*, i. 29. "By *cockleert*, or a vore," *Lock*, 11. "Tell en *downreert*" (= tell him downright), *Lock*, 24. "Tha hads a cort en by tha *heend* legs" (= thou hadst caught her by the hind legs), *Lock*, 14. "To stroak the *kee*," i.e. kine, *Lock*, 8. "Bost any *keendest* theng" (= burst any kind of thing), *Lock*, 9. "Tha wut *lee* a rope *upreert*" (= thou wilt lie a rope upright), *Lock*, 12. "The very dowl's in voke for *leeing*" (= the very devil is in folk for lying), *Lock*, 21.

"Palching about to hire *lees*" (=stalking about to hear lies), *Lock*, 14. "Oh that he *meart*!" (=oh that he might), *Palmer*, 32. "Ne'er troubled their *meend* to 'quire" (=never troubled their mind to enquire), *Palmer*, 56. "He's a *meended* to go to la," i.e. law, *Lock*, 21. "Poor as church *mees*," i.e. mice, *Palmer*, 43. "*Midneart*, as zoon as mid-day," *Palmer*, 5. "'Tis getting *neart*," i.e. night, *Rock*, 14. "Good *neart*," *Lock*, 29. "Up oll tha *neert*," *Lock*, 14. "Tha quesson es put vore *now-reert*" (=the question I put forth now-right, i.e. just now), *Lock*, 25. "A *zennet outreet*" (=a se'nnight outright), *Lock*, 14. "Jim is all *reart*" (=Jem is all right), *Rock*, 9. "Thy *reart* eye," *Lock*, 11. "Cassent zee a *sheen*" (=cannot see a shine), *Lock*, 11. "*Vore-reet* . . . like a totle" (=forth-right, i.e. headlong, like an idle fool), *Lock*, 11. "Gurt *weeld-vowl*" (=great wild-fowl), *Pulman*, 62. "Zet *zeert* in Harry Vursdon" (=set sight in Harry Fursdon), *Lock*, 8. "Zindey-*zenneert* to vurdest" (Sunday, se'nnight at the furthest), *Lock*, 24.

The elision of the letter *d* appears to be very common in Devonshire, and may be illustrated by the following examples:—"Aisy gwain *aroun*" (=easy going around), *Baird*, i. 6. "Tha pickters an *ban*," i.e. band, *Baird*, i. 8. "Nor withy *bans*," *Rock*, 11. "*Behine* tha brow," *Pulman*, 21. "*Blime-bucky-Davy*," i.e. Blind-man's-buff, *Pulman*, 64. "Jist gied a *boun*" (=just gave a bound), *Baird*, i. 55. "*Cole* in thare veet" (=cold in their feet), *Baird*, i. 47. "A stick'd up'n *en*" (=it stuck up on end), *Baird*, i. 30. "Ort haf za *gran*" (=ought half so grand), *Baird*, i. 8. "Alongzide tha *Gilhal*," *Baird*, i. 7. "Stude pin tap tha *groun*" (=stood upon top of the ground), *Baird*, i. 6. "Zlip'd out me *han*," *Baird*, i. 13. "Loosen ets *hole*" (=loosen its hold), *Baird*, i. 29. "If yume *incine*" (=if you are inclined), *Baird*, i. 34. "*Kine* furns an' true" (=kind friends and true), *Pulman*, 73. "*Lor*, wat a spree" (=Lord, what a spree), *Baird*, i. 5. "Why, now you *mine* ma" (=why, now you mind me, i.e. remind me), *Rock*, 6. "Caust en up vule veefty *poun*" (=cost him up full fifty pound), *Baird*, i. 18. "Put en out *roun*," *Baird*, i. 10. "Stan pin tha *groun*," *Baird*, i. 20. "A chap *tole* mer zo," *Baird*, i. 34. "Vetch up thare *win*" (=fetch up their wind, i.e. breath), *Baird*, i. 30. It is perhaps worthy of note that in the quotation given above—"Palching about to hire *lees*," (*Lock*, 14) we have, not only an instance of the substitution of the sound *e* for that of *i*, in *lees* for *lies*, but of the reverse also in *hire* for *hear*. I remember that a few elderly persons at Looe in my boyhood used *hire* for *hear* invariably. W. P.]

12. *Walker*—"BESOM. An instrument to sweep with."

Perry—"BESOM. A tool to sweep with; a broom."

About Ashburton a "BIZZEM broom" is a sweeping tool made of *Broom* (*Spartium*). The similar tools made of Heather and of Birch are "Heath brooms" and "Birch brooms" respectively. The human skin is said to be BAZZAM, or BAZZAMY, when it is discoloured.

About Torquay a "BIZZEM broom" is a sweeping tool made of *Heather* (*Erica*).

Lock—"BOZZOM, or BUZZUM-CHUCK'D. The having a deep dark redness in the cheeks."

Pulman—"BIZZEM. A broom."

Daniel—"Herk! how the bards be chirping in the trees;
The bleddy wayyurs all be dring'd wi bees,
Zee what a pritty *basam* I've a brort,
Here's happle blooth an' vlowers o'every zort,
Zo dan't be glittish, vor the *basam's* yours."

Companion, p. 29.

[The foregoing quotation from Mr. Daniel is from his "Roger and Patty; an Eclogue," in the "Devonshire Dialect." In his "Notes" at the end of the poem he explains "BASAM" to be "Heath-broom." W. P.]

[About Looe the word *Brooms*, as the name of tools made for sweeping, was restricted to those made of vegetable matter, to the exclusion of such as were made of hair or any other material. The latter were distinguished as *Sweeping-brushes*, and to have called them *Hair-brooms* would have been to be guilty of an exquisite absurdity, or a reprehensible affectation, in the opinion of the native hearer. *Brooms* were of three kinds:—*Birch-brooms*, those made of Birch twigs (*Betula*); *Broom brooms*, those made of Broom (*Spartium*); and *Bizzem brooms*, those made of Bizzem = Heather (*Erica*). The word *Bazzam*, or *Bassam*, was applied *primarily* to the flower of the heather, and *secondarily* to anything having a colour more or less resembling that of the heather bloom. W. P.]

Couch—"BASOM, or BASSOMY. A blush-red hue of skin."

Fox—"Ma heep [*i.e.* hip] here leyke *bazzom* tha Roag have a bruised." *Dolly*, p. 44.

Sandys—"BAZZOM. Deep purple colour."

Bannister—"BISSA, BISSOE, BISSOW, BIZZA. Birches."

Duncumb—"BEESOM, BESOM. A broom made of birch." *Eng. Dial. Soc.* B. 12.

Harland—"BEZOM. A broom." *Ibid.* C. 1.

Hutton—"BEESOM, BESOM. A broom. *Ibid.* B. 1.

Halliwell—"BESME. A besom. *Prompt. Parv.*"

Grose—"BEESOM, or BYSSUM. A broom. *North.*" "BOZZOM or BUZZOM-CHUCK'D. A deep dark redness in the cheeks. *West.*"

Shakspeare—"I am the *besom* that must sweep the court clean." *2 King Henry VI.*, iv. 7.

Percy—"Here's the *besom* of Reformation,
Which should have made clean the floor,
But it swept the wealth out of the nation,
And left us dirt good store."

Sale of Rebellious Household Stuff, ii. 269.

13. "BELVE" and "BELVING" are used about Ashburton and Torquay.

Palmer—"BELVING. Bellowing."

Rock—"O, es shall *belve* vrom hour to hour." p. 26.

Pulman—"BELVE. To bellow."

["BELVE" and "BELVING" are used about Looe, where a proverb says "A *belving* cow soon forgets her calf;" i.e. A great display of grief is never of much duration. W. P.]

Couch—"BELVE. To bellow."

Parish—"BELVER. To make an angry disturbance."

Halliwell—"BELVE. To roar; to bellow. *Somerset.* In old English we have *belve*, as in *Piers Plowman*, p. 222."

14. ["BEVERAGE," is used about Looe, where the same mild tipple is also called *Pimpey*. W. P.]

Couch—"PIMPEY. The after cider, made by throwing water on the almost exhausted cheese. It is sometimes called *beverage*, and is only fit for immediate use."

Halliwell—"BEVERAGE. In Devon, a composition of cider, water, and spice is called *beverage*."

15. [See BEATING-AXE in Mr. Marshall's list. W. P.]

[The tool and its uses are thus described by Vancouver :—"Holeing, digging, gripping, ditching, hacking, and hand-beating, being entirely performed with a broad bitted mattock, which is so fastened upon the shaft as to incline inwards little short of an angle of 45° with the line of the handle." p. 126. It will be observed that the author refrains from naming the implement. Such a tool, but having the angle considerably greater than 45°, is in very general use about Looe, where it is termed a BIDDICKS, or BIDDIX. I never heard the term BEATING AXE applied to it, or to any other tool, either there or elsewhere. The tool I speak of is not an

Axe, as stated by Miss Fox, but is, as Mr. Marshall states of his BEATING AXE, "a large *Adze*." W. P.]

Couch—"BIDDICKS. A mattock; perhaps from *beat* and *axe*."

Tregellas—"BIDDIX. Pick; mattock."

"We'll arm ourselves weth ugly things,
Stooanes, biddizes, and boords." *Tales*, p. 16.

16. "BIVER," or "BEVER" is used about Ashburton and Torquay.

Palmer—"BEVERING. Quivering."

Rock—"Ah, Bob, the wisn't *biver* there." p. 5.

Pulman—"BIVVER. To shake with cold."

Moore, Cooke—"BIVER. To shake or quiver." C. D.

Jennings—"BIVER. To quiver; to shake."

Barnes—"BIVER. A.S. *Bifian*. To shake or quiver as with cold or fear. 'Dœt wif eallum limon a bifode.' The woman shook in all her limbs." *Apollonius of Tyre*.

["BEVER" and "BEVERING" are used about Looe. W. P.]

Couch—"BEVER. To shiver."

Daniel—"My dear i *bever'd* and i blish'd." *Mary Ann.*, p. 5. "A *biverin* roosh, a wish'd owld straw." *One and All*, p. 38.

Mon. Mag.—"BIVER. To shake; to quiver." C. D.

Halliwell—"BEVER. To tremble; to quiver. *North*. See *Brockett and Palmer*. *Beveren* is wrongly explained 'flowing' in *Syr Gawayne*, as will appear from *Morte d'Arthur*, i. 22. It is possibly from A.S. *bifian*."

Grose—"BEVERING. Trembling. *North*."

17. *Walker*—"BLAB. To tell what ought to be kept secret. To tell tales."

Perry—"BLAB. To reveal a secret; tattle."

"BLAB" is used about Ashburton and Torquay.

Prince (quoting *Sydenham*)—"So just you are to your own merits, that doing courtesies you scorn to *blab* them." p. 107.

Raleigh—"So when thou hast, as I commanded thee, done *blabbin*." *The Lye*. Last st. *Percy*, ii. 244.

Shakspeare—"When my tongue *blabs*, then let mine eyes not see." *Twelfth Night*, i. 2. "Beaufort's red sparkling eyes *blab* his heart's malice." *2 King Henry VI*. iii. 1.

18. "BLIND-NETTLE" is used about Ashburton.

Halliwell—"BLIND NETTLE. Wild hemp. *Devon*."

[The plant known in West Devonshire as the *Blind-nettle*, is, according to Mr. Marshall, that known to botanists as the *Dead-nettle*. The epithets *Blind* and *Dead* refer, of course, to the inability of the plant to sting. The habit of denoting the absence of a quality by a word implying the absence of life or of a sense, is common in Devonshire and Cornwall: Thus, a nut which contains no kernel is said to be *deaf*; and not long since a native of Ashburton, who had been working in Kent's Cavern, Torquay, for some days without finding any object of interest, informed me that he "hated to work in *deev* (deaf) ground," i.e. unproductive soil. Since writing the foregoing, another of the Kent's Cavern workmen has told me that the deposit in which he had found nothing, was "all *blind* stuff." W. P.]

19. "BOWERLY" is used at Ashburton and Torquay; but at the latter, a *Bowerly woman* is not only comely, but more or less masculine in stature and aspect.

Palmer—"BOWERLY. Handsome; of a certain size. *Buirldly*—Scottish for stout-built."

Rock—"Wi' *bowerly* maids." p. 17.

Moore—"BOWERLY. Blooming; comely. 'A *bowerly* woman.'"

Couch—"BOWERLY. Stately and comely. 'A *bowerly* woman.'"

Cooke—"BOWERLY. Blooming. 'A comely, *bowerly* woman.'"

Mon. Mag.—"BOWERLY. Blooming. 'A comely, *bowerly* woman.' N. D."

Halliwell—"BOWERLY. Tall; handsome. *West*."

Grose—"BOORLY. Lusty; gross, and large-made. A *boorly* man or woman. *North*."

20. *Walker*—"BRAVE. Magnificent; grand; excellent."

Perry—"BRAVE. Excellent."

"BRAVE" is used about Ashburton and Torquay.

Rock—"Yer's a *brave* briss and herridge." p. 34.

Pulman—"BRAVE. Well in health. 'I be quite *brave*, thank 'ee."

Jennings—"BRAVE. Well; recovering."

Williams—"BRAVE. In good health."

["BRAVE, BRAVISH, BRAVELY," are used about Looe, where, in reply to the question "How much is there left?" "A *brave* thing"—a somewhat considerable quantity, is frequently heard. W. P.]

Couch—"BRAVE. Fairly good, tolerably well. It is used

sometimes without any definite meaning, to qualify a noun, implying that the thing is tolerably good of its sort; *eg.* 'Tis *brave* weather.' 'How be you?' '*Bravish*.' Pepys says (September 19, 1662) that he walked to Redriffe by *brave* moonshine.

Daniel— "For she, the himperunt young chit,
Ded wink pun wan a *bravish* bit."—*Mary Ann*, p. 16.
"A *brave* big scratch."—*Portfolio*, p. 26.
"Make mun *brave* an red."—*Ibid.*, p. 33.

Forfar— "Ben a *bra'* journey to-day, s'poase."—*Exhib.* p. 18.
"I s'poase 'tes *braave* and eerly."—*Ibid.*, p. 91.

Gervis— "How are ee, Cappen Jan?"
"*Braave*, thank 'ee, Rechat: how art thee?"—*Ballads*, p. 19.
"I hear how she's a *bravish* mine."—*Ibid.*

Henwood— "I got a jeblat pie, eh es but smale,
A *bra* size heckmal, chull, and clunken ale."
Conference, p. 28.

"Good mornen, unkel Jan, how d'ye fadghey s'twere now?"
"Pure and *brave*, Kappen Wiljambes, but I been but so so."
Ibid., p. 31.

Higham—"Thee 'rt *brave* and pert, sure nuff."—*Exhib.* p. 75.

Miles— "What *braave* times es comen."—*Ballads*, p. 60.

Sandys—"BRA. Brave. Meaning fine."

Tregellas—"BRAAVE. Very; also used to express the superlative degree; '*brave* and bloody;' = very bloody; 'a *brave* catch of fish; = a good catch; a *brave* size = rather large." "A *braave* accident it was, I assure ee." *Tales*, p. 7. "A *braave* consarn 'twas to find un, I 'sure ee." *Ibid.*, p. 67. "We were all *bravely* loffing at un." *Ibid.*, p. 100. "And have a *braave* pint too to-morrow hevvening up to hum, and a *braave* dance too." *Ibid.*, p. 163. "You're *braavely* out of the way" [*i.e.* your road. W. P.] *Ibid.*, p. 182. "I'm *braave* and ould, I am, but nothin' to hurt for strength like yet." *Peeps*, p. 13. "A went *braave* and hard 'pon the lime-ash." *Ibid.*, p. 134.

Verral—"Thee wast *braave* an' black." *Ibid.*, p. 53.

Mon. Mag.—"BRAVE. Well; recovering in health. 'He's *brave* to-day.'" *C.*

Parish—"BRAVE. [*Brave*, French.] Well in health. 'How are you, John?' 'I'm *bravely*, thank you.' BRAVE. Prosperous. I have been making out *bravely* since you were last here."

Burns—"His locked, lettered *braw* brass collar
Show'd him the gentleman and scholar."
The Two Dogs, lines 13-14.

"Gie fine *braw* claes to fine life guards."

To James Smith, st. 22.

"Comes hame, perhaps, to show a *braw* new gown."

Cottar's Saturday Night, st. 4.

"*Braw* sober lessons."—*Second Epistle to Davis, st. 4.*

"Though this was fair, and that was *braw*,

And yon the toast of a' the town,

I sigh'd and said amang them a',

Ye are na Mary Morrison."—*Mary Morrison, st. 2.*

"Wi' *braw* new branks in meikle pride."

Willie Chalmers, st. 1.

"Oh, see you not yon hills and dales,

The sun shines on see *brawlie*!"—*Collier Laddie, st. 2.*

"Miss Smith she has wit, and Miss Betty is *braw*."

Mauchline Bells.

"As bonnie lasses I ha'e seen,

And mony full as *braw*."—*Handsome Niel, st. 2.*

Halliwell—"BRAVE. Finely dressed; fine; good. Also a. verb. Cf. *Thynne's Debate*, p. 23; *Drayton's Poems*, p. 23; *Timon*, p. 19; *Collier's Old Ballads*, p. 22; *Jacke of Dover*, p. 6, *braverly*." "BRAVERY. Finery. The ancient Britons painted their bodies, 'which they esteemed a great *braverie*,' *Hollinshed, Chron. England*, p. 55. Cf. *Tarleton*, p. 98."

Browne—"Plain simplicity doth dwell,
At Lydford without *bravery*." p. 12.

Shakspeare—"He has *brave* utensils (for so he calls them),
Which when he has a house, he'll deck withal."
Tempest, iii. 2.

"Unless thou give me crowns, *brave* crowns;
Or mangled shalt thou be by this my sword."
K. Henry V., iv. 4.

"This *brave* o'erhanging—this majestical roof."
Hamlet, ii. 2.

Percy—"A *braver* bower you ne'er did see,
Than my true love did build for me."
The Lady Turned Serving Man, vol. iii. p. 70, lines 11-12.

"Fresh straw will I have laid on thy bed so *brave*."
King and the Miller of Mansfield, vol. iii. p. 150, part i, l. 63.

"Here come expenses and charges indeed;
Now must we needs be *brave*, though we spend all we have;
For of new garments we have great need."
Ibid, p. 153, part ii., lines 44-6.

[In some of the foregoing quotations BRAVE signifies fine; thus, in the passages from Percy, a "*braver* bower" may be read a "*finer* bower" without affecting the meaning. Now

fine is one of the numerous words which would be employed for *brave* in many cases where the uninitiated would suppose it misapplied; thus, Forfar's "*bra* journey" = a *fine* journey; and "*fine* and eerly" may take the place of his "*braave* and eerly," since either would signify in the first case a "considerable journey," and in the latter "very early." In the same way, if Daniel had written "*a fineish* bit," "*a fine* big scratch," and "*fine* and red," he might perhaps have intensified his meaning, but would not have produced any other effect on it. I remember an old lady at Looe once spoke depreciatingly of her neighbour's new coat, by saying that the cloth of which it was made was "*fine* and coarse," i.e. very coarse; "*brave* and coarse, or "*cruel* coarse," would have expressed the same meaning. W.P.]

21. "BRISS" is used about Ashburton and Torquay.

Wilkey—"Rise, Betsy, up, and bring a bit more *brouse*,
And make a blast to cheer the chimney corner."

Rock—"BRISS, BRIST. Breeze; dust. BROWSE. Under-wood."

"Bring the *brouse*
And cricks from Cockhedge plat." p. 4.

Cooke—"BRISS. Dust. "I've got some briss in my eye."

Mon. Mag.—"BRISS. Dust. Not in the Devonian sense of *pilm*, but dust mixed with small portions of furze, frith, faggot-wood. Hence, 'I've got some *briss* in my eye,' means not a particle of dust, but a small bit of furze, a *light and minute fragment of frith*. D. BRISS and BUTTONS. Dust and sheep's dung. BRUSS. The dry spine of furze broken off."

Grose—"BRISS. Dust. *Exmore. West.*"

22. [Mr. Wilkey informs me that he once heard one of the horse-keepers at the London Inn, Exeter, use the words 'Tes cruel hot and *buldrum*.' 'Tis very hot and faint.'" W.P.]

Palmer—"BULDERING. Sultry."

Rock—"I'm drow; 'tes *buldering*, Dame, ta day." p. 22.

Lock—"BULDERING weather. Hot and sultry. Perhaps from *boiling* or *broiling* heat."

Mon. Mag.—"BULDERING. Hot; sultry; tending to thunder (*Buldrer*, Danish, perstreper). D.C."

Grose—"BULDERING (weather). Hot; sultry. *Exmore.*"

23. "BURROW" is used about Ashburton and Torquay.

Bourring—[Speaking of the names of places in Devonshire.

W. P.] "We have nine BURROWS." *Trans. Devon. Assoc.* 1866, p. 35.

Barnes—"BURROW, BUR. A rabbit *burrow*."

["BURROW" is used about Looe. W. P.]

Couch—"BEAT-BURROW. A heap of burnt turves."

Bannister—"BERRY = BRE, a hill; or BURY, a castle."
"BURROW BELLES. The far (*pel*), broad, or large (*les*), burrow or sepulchre." "BARROW GAVES. Burrow outside (*ves*) the fence (*ce*)."
"BURY. The same as BERRY. The tumulus."

Carew—"A hillocke, or BOROUGH." p. 148. "BEAT-BOROUGHES." p. 19.

N. & Q.—In the north of Gloucestershire I have met with the word *burrow* meaning sheltered, secure from the wind, &c. The side of a thick coppice was spoken of as a very *burrow* place for cattle." 1st S. vii. 205.

Halliwell—BARROW. A hillock; an ancient tumulus. It would appear from Lambarde, *Perambulation of Kent*, 1596, p. 435, that the term in his time was peculiar to the West of England. Cf. *Etyot's Dictionarie* in v. *Grumus, Tumulus*. Kennett, MS. Lansd. 1033, gives it as a Durham "word for a grove."

24. "BUSS" is used about Ashburton and "Boss" about Torquay.

Rock—"BUSK. A calf too long unweaned." "BUSKER. A boy too long unweaned." "Whare the *busks* an' barras be." p. 4. "Ott a gurt *busker* toad thee art." p. 3.

Pulman—"Boss. A calf too long unweaned."

Jennings—"BUSS. A half-grown calf."

Williams—"Bos, BUS. A yearling calf; a milk sop. (Lat. *bos*)."

Couch—"BUSSY-MILK. The first milk after calving."

Bannister—"BUSS MEADOW. Calf (*bus*. Modern Cornish) meadow." "BUSSY = BOUDGIE = BOUJEY. Cow (*beach*) house (*chy*) or fold."

Mon. Mag.—"BUSS. A steer. D. BUSSA-CALF. A calf kept on the cow till it weans itself."

Halliwell—"BUSS. A calf."

Gosse—"BORSE. A calf of half a year old. *Hampsh.*"

25 and 26. "BUTT" and "BUTT-LOAD" are used about Ashburton and Torquay.

Pulman—"DUNG-PUTT. A cart for carrying *dung*."

Moore—"BUTT. A close-bodied cart."

Vancouver—"One horse carts, or *butts*, are also generally

made use of; they are made to tip like tumbrils, and will hold about five seams, or from 10 to 12 bushels each. Being placed on low wheels, they are rendered very convenient for loading large stones, or any heavy article. The three-wheel *butts*, with barrow handles, drawn by one horse, and holding level full, from five to six bushels, are also much used and found very suitable for removing stones or any heavy load to a short distance." p. 125.

Jennings—"PUT. A two-wheeled cart used in husbandry, and so constructed as to be turned up at the axle to discharge the load."

Williams—"BUT for PUT. A heavy cart."

Barnes—"POT, or PUTT. A dung-pot, or dung-*putt*. A kind of broad-wheeled dung-cart that tips to shoot the dung."

["BUTT" and "BUTT-LOAD" are used about Looe. W. P.]

Couch—"BUTT. A heavy two-wheeled cart."

Mon. Mag.—"BUTT. A cart. D. C."

Halliwell—"BUT. Any large vessel or cart." "PUT. A two-wheeled cart used in husbandry, and so constructed as to be turned up at the axle to discharge the load."

27. *Halliwell*—"CADDLE. Cow-parsnip. Devon."

28. "CATTE-BALL" is used about Ashburton and Torquay.

Baird—"They truckl'd en roun like a big *caddy bal*." i. 20.

Daniel—"Aw ! Cappen Sam my wheel for all
Es zackly like a *catty* ball,
Es joomping up, an' boomping down."

Companion, p. 25.

[The ball used by girls in the amusement of *tacking* is called a *Tacky ball* at Looe, where the game was very common forty years ago. The ball, which should be very elastic, is thrown on the ground, and met at its rebound, by the palm of the hand, and again struck to the ground, to be again met, and so on. The skill of the performer is displayed by the number of times it is thus met. The amusement requires no more than one person, but frequently two or more engage in it, each having her own ball, when she who secures the greatest number of continuous rebounds is the victor. *Tacking* is, no doubt, so called from the ball being *tacked*, or struck with the open palm. There can be little or no doubt that the *Catteball* of Kingsbridge, the *Caddy bal* of Exeter, the *Catty ball* of West Cornwall, and the *Tacky ball* of Looe are one and the same thing. At least the last two resemble each

other in "joomping up and boomping down"—to use the language of Mr. Daniel's "Cappen Sam." W. P.]

29. *Palmer*—"CAUCH. Mess; a nasty mixture."

Rock—"KAUTCH. A disagreeable mixture. To mix disagreeably." "Et dith more gude than *kautchy vizzick*." p. 6. "'Ot *kautch* be telling." p. 31.

Lock—"CAUCHERIES in Devonshire means any slops or medicinal compositions without distinction."

["CAUCH" is used about Looe as a name for food badly prepared, or consisting of an unattractive mixture, or which had been untidily handled, or, in short, for any nasty mixture. W. P.]

Couch—"CAUCHY. Wet; sloppy. 'The roads are *cauchy*.'"

Daniel—"I got a doctor stoppin here,
The peepul kal mun quaka,
I vang'd sum trade ur *cautch* ov he. *Batch*, p. 9.

Mon. Mag.—"CAWCH. Nasty viscous stuff; a mess. *C. D.*"
"CAWCHERIES. Medicinal slops. *D.*"

Hallivell—"CAUCH. A nasty mixture. *Devon*. Sometimes called a CAUCHERY."

Grose—"CAUCHERY. A medicinal composition or slop."

30. "ZESS" is used about Ashburton and Torquay.

Rock—"CESS. A recess. Corn placed in the barn in a small mow before thrashing."

Lock—"ZESS. The sheaves regularly piled and stowed in a barn in like manner as a corn-rick or mow is without doors; but the Devonshire word *Zess* always means the pile of sheaves within the barn."

Hallivell—"ZESS. A compartment, or a threshing-floor for the reception of the wheat that has been threshed, but not winnowed."

Grose—"ZESS. A pile of sieves [*sic*? sheaves. W. P.] in a barn. *Exm.*"

31. "CHAINY" is used about Ashburton and Torquay.

Wolcot—"What's *cheny* thoft is clome." *Roy. Vis.*

Rock—"Yer *cheney* 'll be cloam." p. 17.

["CHAINY" is used about Looe, and probably everywhere else, as it is, of course, nothing more than a vulgar pronunciation of CHINA, having little philological value. W. P.]

Daniel—"A set o' *cheyney*, al complaint,
Weth every sasser, cup an' plate."—*Wit*, p. 44.
"He breaked the *chayney* cup."—*New Budget*, p. 26.

Tregellas—"CHAINY. China." "Raal *chainy* for clome things to washy in." *Tales*, p. 31.

Harland—"CHEANNY. China." *Eng. Dial. Soc.* C. 1.

32. "CHAUK" is used about Ashburton and Torquay.
[Is CHAUK a corruption of CHAUF = Chough = *Corvus graculus*? W. P.]

33. *Rock*—"CHEESE. The pile of pommage in a cider press."

Pulman—"CHEESE. The pulp of apples prepared for the cider press."

Moore—"CHEESE. The pile of pommage in cider making."

Barnes—"CHEESE. A bag of pummice from the cider wring."

["CHEESE" is used about Looe. W. P.]

Couch—"CHEESE. The cake of alternate pounded apples and reed from which the cider is pressed."

Halliwell—"CHEESE. A bag of pummace from the cider-wring." *Var. dial.*

34. *Walker*—"CHAR. Work done by the day. To work at others' houses by the day

'As the maid that milks

And does the meanest *chars*.'"—*Shakespeare*.

[The passage quoted by Walker occurs in *Ant. & Cleo.*, iv. 13. In Knight's Edition, the word is *Chare* not *Char*. The latter word does not occur in Mrs. Cowden Clarke's *Concordance*. 1874. W. P.]

Perry—"CHAR. Daywork; a job." "CHARWOMAN. Who works by the day."

Bray—"A poor widow who earns her bread as *chare-woman*." iii. 178.

"CHOR" is used about Ashburton and Torquay.

Palmer—"CHEWERS. Jobs."

Rock—"CHEWER. A char; a small job." "*Chewers* ban't gwain to crick my back." p. 4.

Lock—"CHUERY, or CHEWREE. To assist the servants, and supply their places occasionally in the most servile work of the house."

Pulman—"CHOBY. To do *char* work."

Jennings—"CHOR. A job; any dirty household work. CHOORER. Choorwoman. A woman who goes out to do any kind of odd and dirty work, hence the term *charwoman* in our polished dialect; but it ought to be *choorwoman*. CHOORY. To do any kind of dirty household work."

Barnes—"CHOOR. (A.S. *Cer*, *Cier*, or *Cyr*. Turn, occasion, business.) A *char* or job of household work done by an occasional helper or *charwoman*."

["CHARE" and "CHOOR" are used about Looe. W. P.]

T. Q. Couch—"CHURER. A *charwoman*."

Daniel—"I goes out, Betsy Jane, to *chore*

An' wash an' clain, I do."—*Evenings*, 32.

"An' starchey, an' hireun, an' *chewry* a mite."

Wit. p. 13.

Garland—"CHUR. Any odd job of work. Qy. Corruption of *Char*?"

Mon. Mag.—"CHEURE, CHOWRY. To assist the servants, and supply their places occasionally. Hence CHOUR. A job of work. CHEURER, CHOURING-WOMAN."

Thoresby—"CHARE-WOMAN, CHAR-WOMAN. One hired by the day (not a fixed servant) to wash." *Eng. Dial. Soc.* B. 17.

Ray. N.—"CHAR. A particular business or talk; [not] from the word *charge*. 'That *char* is *chard*,' &c., that business is dispatched. 'I have a little *char* for you,' &c." *Eng. Dial. Soc.* B. 15.

N. & Q.—"The noun *chare*, or *chore*, the verb to *chare*, and the participle *charing*, are by no means of unfrequent use. . . . Sir Walter Scott, in one of his novels, speaks of 'the maid who milks and does the meanest *chares*;' in which passage he quotes word for word from Shakspeare (*A. and C.*, iv. 13). . . . Another instance of the use of the word occurs (*A. and C.*, v. 2), 'When thou hast done this *chare*.' Ray, in his *Collection of Proverbs*, gives 'That *char* is *char'd*, as the good wife said when she had hanged her husband.'" 2nd S. x. 135. "Baily says: *Char*; *chare* is a job, a small piece of work, perhaps from Sax. *cære*, care. Dr. Richardson derives *chare*, *charewoman*, from A. Sax. *cyran*, *acyran*, *vertere*, *revertere*; and he says a *charwoman* is one who takes her *turn* or *bout* at any work, who goes out for a day's *turn* at work. Now *journe* is used by Chaucer for a 'day:' and a journeyman is strictly a man who works by the *day*; and I take it that a *charwoman* is a woman hired by the *day*, and that the word '*charwoman*' is a corruption of *jourwoman*." *Ibid.* "In his *Dictionary of Etymology*, Mr. Hensleigh Wedgwood says, under the head of CHARE, 'A *chare* is a turn of work; *charewoman*, one who is engaged for an occasional turn. A.S. *cyre*, a turn; *cerran*. Du. *Keeren*, to turn; Gael. *car*, turn, twist.'" *Ibid.*

Halliwel—"CHAR. A work or business. That *char* is *charred*, that work is done. *North.* See Stevens' *Old Plays*, ii. 64

Middleton, iii. 237, iv. 382; Peele's Works, i. 127; Sir Thomas More, p. 37; *Boke of Curtasye*, p. 4; *Chester Plays*, ii. 87; *Townsley Myst.* p. 106. Also to hew stones. CHAR-WOMAN, a woman hired by the day for miscellaneous work." "CHEWERS. Chares or tasks. *Devon.*" "CHEWREE-RING. To assist servants. *Wilts.*" "CHOORY. To work or *char*. *Somerset.*"

Grose—"CHAR, CHEURE. A particular business or task. 'That *char* is charred, that job is done;' 'I have a little *char* for you.' *North.* Pronounced in Wilts a *cheure*." "CHEURY, or CHEWREE. To assist servants, and occasionally to supply their place in the most servile work of the house."

35. *Bray*—"The snow . . . making the roads so *cladgy*-like." i. 32.

"CLIBBY" = Adhesive, is used about Ashburton.

"CLIDGY" = Adhesive, is used about Torquay.

Baird—"An' legs and vingers *clitche*l." ii. 16.

Bowring—"Of words purely local, such as . . . *claggy* . . . a list of nearly a thousand might be collected." *Trans. Devon Assoc.*, 1866, p. 35.

Palmer—"CLAGGY. Glutinous; sticky."

Rock—"CLADGY. Close; cloggy; glutinous; waxy." "Be them taties *cladgy*?" p. 6. "CLITCH. To stick to." "They do *clitch* to one another." p. 3. "CLITCHY. Sticky." "CLIBBY. Sticky."

Pulman—"CLITCH. To stick together; to make adhere." "CLOGGY. The roads are said to be *cloggy* when covered with adhesive mud."

Moore—"CLADGY. Waxy. 'The potatoes are *cladgy*.'"

["CLIB" and "CLIBBY" are used about Looe. W. P.]

Couch—"CLIDGY. A gelatinous sticky consistence in bread, confectionary," &c. "CLIB. To stick or adhere." "CLIBBY. Sticky; adhesive."

Daniel—"I'd *clab* to un around the nick

Like lemput to a rock."—*Pickings*, p. 7.

"*Clidgy*, an' gingerbred, an' nets." [=nuts. W. P.]

Evenings, p. 32

[Of the three *luxuries* mentioned by Mr. Daniel, *Clidgy*, a cheap sweetmeat, which takes its name from being very sticky, is very popular in Cornwall, where certain of its varieties are known as *Locust*, *Gibraltar-rock*, and *Bull's-eyes*. W. P.]

Sandys—"CLOGGY, CLIDGY, CLUTCHY. Clammy; sticky."

Bannister—"CLIDGEY = CLOGGY = CLOW-GEA = CLOWGGY. Miry, sticky [field]."

Mon. Mag.—"CLADGY, CLATCHY. Clammy; gluey. *D.*"
 "CLIBBY, Clammy; like bird-lime."

Lewis—"CLEDDY. [Said of] stiff clay ground." *Eng. Dial. Soc.* B. 11.

Ray, S. E.—"CLEDDY. Stiff. *Kent.*"

Marshall—"CLAGGY. Sticky; as wet clay." *Eng. Dial. Soc.* B. 2.

Harland—"CLAGGY. Adhesive." *Ibid.* C. 1.

Halliwell—"CLAG. To stick; or adhere. *North.* Hence CLAGGY. Glutinous; sticky." "CLITCH. To stick; to adhere; to become thick or glutinous. *Devon.*" "CLIBBY. Sticky; adhesive. *Devon.*"

Grose—"CLEDDY. Stiff. 'Cledgy ground,' stiff land. *Kent.*"
 "CLAGGY. Sticky, as wet clay. *North.*"

36. *Halliwell*—"CLAW-ILL. An ulcer in the feet of cattle. *Devon.*"

37. "CLEVER" = In good health, is used about Ashburton and Torquay.

["CLEVER" = In good health, is used about Looe. W. P.]

Tregelles—"CLEVER. All right; in good health."

"Good hevining, Sampy, how dost do?"

"Clever, cumrade."—*Tales*, p. 44.

N. & Q.—[In East Norfolk] "the common people use [the word *clever*] (as applied to individuals) in the sense of honest-respectable, and pronounce it *claver*: thus, 'Oh yes, Sir, I have always *heard* he was a very *claver* man,' [with reference, simply] to his honesty and good conduct." 1st. S. x. 522. [In America, *Clever*] "is universally used in the sense of *good-natured, jovial, good-tempered, amiable.*" 2d. S. x. 67. "*Clever* or *clever-looking* is commonly used in Lancashire to signify a fine well-made man." *Ibid.*, 138, "A Somersetshire farmer [once said, respecting a pig of goodly proportions,] 'I tell e what, zur, he'd make a very *clever* griskin.'" *Ibid.*, 178. "An itinerant horse-breeder, travelling from Norfolk, [said of a foal, but a month old,] 'That's a very *clever* colt indeed, Sir.'" [Meaning that the foal's "points" were promising. W. P.] *Ibid.*, 317.

Halliwell—"CLEVER. Handsome; good-looking. *East. Kennet* says 'nimble; neat; dexterous.' Lusty; very well. *Lanc.*"

Grove—"CLEVER. Neat; smooth; cleanly-wrought; dexterous. *South.*"

38. "CLIT" and "CLITTY" are used about Ashburton and Torquay.

Palmer—"CLIT. Heavy."

Rock—"CLIT-BREAD. Heavy-bread; bread not raised." "The keaks be *clitty*." p. 3. "Warm *clit* bread." p. 30.

Pulman—"CLIT. Bread imperfectly baked and fermented is said to be *clit*."

Moore—"CLITTY. Close; clotted. '*Clitty* bread,' close bread."

Jennings—"CLIT. To be imperfectly fermented: applied to bread." "CLITTY. Imperfectly fermented."

Williams—"CLIT, CLITTY. Applied to bread not properly kneaded."

Barnes—"CLITTY. Stringy and sticky, or tangled."

["CLESTY" is about Looe applied to bread imperfectly fermented. W. P.]

Couch—"CLUSTY. A close heavy consistence, as in bread, potatoes, &c."

Garland—"CLISTY. Soft; sticky."

Cooke—"CLITTY. Close. CLITTY BREAD. Close bread. CLITTY GRUEL. With clots in it."

Mon. Mag.—"CLITTY. Close; unequal in its composition; with clots. '*Clitty* bread,' that is close bread. 'The gruel is *clitty*,' that is with clots in it. D."

Halliwell—"CLIT. Imperfectly fomented [*sic* W. P.], applied to bread. Somerset. CLITTY. Stringy; lumpy. West."

39. Bray—"CLOME. Earthenware." ii. 289.

"CLOME" is used about Ashburton and Torquay.

Lake—"CLOAM. Earthenware."

Wolcot—"What's cheny thoft, is *clome*." Roy. Vis.

Palmer—"CLOMING. Earthenware."

Rock—"CLOAM. Delft; earthenware." "CLOAMY. Made of loam." "That *cloam* buzza wi' two handles" p. 34.

Lock—"CLOME (Perhaps from *loam*). Earthenware."

Pulman—"CLOME (A.S. *clam*, clay). Crockery ware."

Moore—"CLOME. Earthenware."

Williams—"CLOAM, CLOAMEN. Coarse earthenware."

["CLOME, CLOMIN, CLOME-SHOP" are used about Looe." W.P.]

Couch—"CLOME. Earthenware."

Daniel—"In cups ov *clome*." *Thalia*, p. 20.

Forfar—"Tummols o' flesh 'pon the *cloame*." *Exhib.*, p. 60.

Fox—"A *clom* buzza of scale melk." *Dolly*, p. 44.

Garland—"CLOMEN. Made of earthenware. A mine captain of St. Just, who was often very rich in his figures, spoke

of a hypocritical man as 'an old *clomen* cat, hollow to his toes.'"

Henwood—"There's no good in hez havaga, hez *clomen* cat like,
To the toes eh hez holla, plez sure eh ez, Mike."

Conference, p. 31.

Higham—"All your *clome*, and flesh, and tates, and puddens
out smoken 'pon the table." *Exhib.*, p. 140.

Sandys—"CLOAM. Earthenware."

Tregellas—"CLOME. Earthenware." "*Clome* things to washy
in." *Tales*, p. 31.

Cooke—"CLOME. Earthenware." "CLOME-SHOP. Delft-
shop."

Mon. Mag.—"CLOME. Earthenware, that is kiln-loam. *D.C.*
CLOME-SHOP. Delft-shop. *D.C.* CLOMEN-OVEN. Oven of
clome or delft. 'Devoniensis nuncupant vasa fictilia, omnis
generis, CLOME. Belgis leem est terra figularis.' *Vid. Jun.*"

Halliwell—"CLOAM. Earthenware. *Devon.* See Clobery's
Divine Glimpses, 1659, p. 95. *Clomer*, a maker of earthen-
ware. *Ibid.*, p. 33." "CLOOM. Clay or cement. *Kennett.*"
"CLUME-BUZZA. An earthen pan. *Devon.*"

Grose—"CLOAM. Coarse earthenware. *Exm.*" "CLUME-
BUZZA. An earthen pan. *Cornw.*"

40. *Perry*—"CLOUT. To beat; strike."

"CLOUT" is used about Ashburton and Torquay.

Baird—"I shude up way me han an a vetch'd en a *clout*."
i. 24.

Wolcot—"How I lang'd to *clout*'n." *Mid. Elect.*

Rock—"CLOUT. A blow; a cuff." "I'll gie th' a *clout*." p. 3.

Pulman—"CLOUT (Welsh *clwt*). A blow with the hand."

Williams—"CLOUT. A blow in the face or head; to beat
about the head."

Barnes—"CLOUT. A blow with the flat hand." "I'll gie
thee a *clout* in the head."

["CLOUT" is used about Looe. *W. P.*]

Couch—"CLOUT. To strike. 'To *clout*,' or to give a *clout*,
is to give a blow. The meaning perhaps is to strike or hit,
as with a *clod* or *clot*, or anything *bumpish*; or, according to
Beaumont and Fletcher, to beat to *clouts*."

Forfar—"I hit 'n a *clout*." *Exhib.*, p. 59.

Mon. Mag.—"CLOUT. A box on the ear."

Halliwell—"CLOUT. A blow." *Var. dial.* See *Richard*
Coer de Lion, 768; *Cov. Myst.* p. 98; *Sir Isumbras*, 619.
Also a verb.

Grose—"CLOUT. To beat. *North.*"

41. *Bray*—"Our scalded or *clouted cream*." ii. 3.

"CLOTTED CREAM" is used about Ashburton.

"CLOWTED CREAM" and "CLOTTED CREAM" are used about Torquay.

Rock—"CLOUTED CREAM. Cream raised by heat." "An' *clotted crayme* bam-bye." p. 7.

Moore—"CLOUTED CREAM. Cream raised by heat."

Vancouver—"The *clouted* cream so much celebrated in Devonshire." p. 215.

["CLOTTED CREAM" is used about Looe. I have no recollection of its being called *Clowted* cream there. W. P.]

Cooke—"CLOUTED CREAM. That which rises on milk over a slow fire."

Mon. Mag.—"CLOUTED CREAM. The cream which rises on milk put over a slow fire; not (as is often understood) clotted or coagulated, but spread over the milk like a *clout* or piece over the sole of a shoe: whence *clouted* shoon. C. D."

Spenser—"Ne would she scorn the simple shepherd's swain;
For she would call him often heme,
And give him curds and *clouted cream*."

Shepherd's Calendar. November. Lines 96-99.

42. "COB" and "COBWALLS" are used about Ashburton and Torquay.

Palmer—"COBWALLS. Mudwalls."

Rock—"COB. Mud or loam mixed with straw for building." "I want 'e build vour walls o' *cob*." p. 13.

Pulman—"COB. Marl tempered with straw, much used in Devonshire for walls."

Moore—"COB. Mud or loam with straw."

Vancouver—"The universal prevalence of *cob*, or mud walls, will serve in a great measure to account for the untenantable state of many buildings, and for the general air of wretchedness and misery so often met with in the villages, and detached groups of houses throughout the district [of North Devon. W. P.]"

Jennings—"COB-WALL. Mud wall; a wall made of clay mixed with straw."

Williams—"COB-WALL. Made of mud and straw, mud-and-stud, or wattle-and-dab."

["COB" and "COBWALLS" are used about Looe. W. P.]

Carew—"The poore Cotager contenteth himselfe with *Cob* for his wals." p. 53.

Cooke—"COB, CLOB. Mud, loam, and straw."

Mon. Mag.—"COB, CLOB. Mud; loam and straw. D. C."

"COB-WALL. A mud-wall; a wall made of loam and straw.
D. C."

Halliwell—"COB. Marl mixed with straw, used for walls.
West."

43. [One of the two principal fishmongers at Torquay tells me that though he never heard COIN applied to a crab at Torquay, he has at Brixham heard of *Coin Crabs*, but has no idea what they are. The other states that a *Coin Crab* is a particular species of crab, which is of small size, and, whether edible or not, is certainly not commonly eaten, and is never offered for sale. They both add that some of the edible crabs are called *Queen Crabs*, and they *suppose* the name to be applied to "she crabs" only, but are by no means certain that it is so. "I am sure," said the second of my informants, "that 'tis altogether a different thing from a *Coin Crab*." W. P.]

44. *Halliwell*—"CONVENTIONARY - RENTS. The reserved rents of life-leases."

45. "COMBE" = Valley, is used about Ashburton and Torquay.

Bowring—"COMBE. Valley. There are in Devonshire [as names of places, W. P.] 31 Combes without any other designation; with *Combe* as a prefix, 21; while to 200 places *Combe* as a postfix is attached. Though *combe* is a pure Saxon word, it nearly resembles in sound and meaning the *cwm* of the Welsh, from which it has been supposed to be derived. The word never once occurs in Shakespeare." *Trans. Devon. Assoc.* 1866, p. 32.

Rock—"COMB, or COMBE. A valley between hills open at one end only."

Pulman—"COMBE. (Celtic, *cwm*). A little valley opening into a large one."

Moore, Cooke—"COMBE. A hollow between two hills open at one end only."

Vancouver—"The continual wind in the boisterous and even stiller seasons, which is always found passing along these *combs* or valleys, subject their inhabitants to far greater inconvenience than they would otherwise be liable to, were the farm-yards and buildings situated midway, rather than at the foot of such declivities." p. 86.

Jennings—"In Compton ood—in Hartree *coom*." p. 129.

["COMBE" is used about Looe. W. P.]

Couch—"Through Long-*coomb* valley." p. 41.

Tregellas—"COOMBE. Valley." "You must keep down the *coombe* for about half a mile." *Tales*, p. 94.

Bannister—"COM, COMBE, COOMBE = Welsh *cwm*. A bottom; a vale; a place between two hills; a dingle."

Mon. Mag.—"COMBE. A hollow between two hills open at one end only."

Parish—"COOMBE, or COMBE (*cwm*, Welsh, a valley). A hollow in the Downs. This word is to be traced in the names of many Southdown villages and farms, such as *Telscombe, Ashcombe, &c.*"

Ray, S. & E.—"COMBE. A valley (or a hill or plain between valleys, *More's note*); *Devon. Cornw.*; *ab A.S. comb*, à C. Br. *edque antiquo Gallico cwm*, unde defluxit Gallicum recens combe, vallis utrinque collibus obsita. *Skinner.*" *Eng. Dial. Soc.* B. 16.

Hallivell—"COMB. A valley. *Var. dial.* See Hollinshead. *Hist. Ireland*, p. 169."

Gosse—"COMB. A hollow or valley. *Suff.*"

46. "COURTLAGE" is used about Ashburton and Torquay.

Rock—"COURTLAGE. The fore or back yard of a house." "A'most tha *courtlage* vull." p. 21.

Pulman—"COURT (COURTLEDGE). The small back yard of a house."

["COURTLAGE" is used about Looe. W. P.]

Cooke—"COURTLAGE. The fore or back yard of a house."

Mon. Mag.—"COURTLAGE. The fore or back yard of a house. *C.*"

Ray, S. E.—"CURTLAGE. A 'gateroom or backside.' *More's note, Ray.* (2.)" *Eng. Dial. Soc.* B. 16.

Hallivell—"COURT. A yard to a house, which is also called a *courtain*."

Prince (quoting *Hill*)—"Whereas the houses, *courtldges*, With gardens, orchards." p. 364.

47. *Moore*—"COUSIN BETTY. A female who goes about the country to excite charity."

48. "CREEM and CREEMED" are used about Ashburton and Torquay.

Palmer—"CREEM. To squeeze."

Rock—"CREEM to squeeze." "Doant *creem* me, Nell." p. 22.

Pulman—"CREYME. To be under the influence of prolonged cold and shivering, from fear or illness. 'I'da a *creyme* all over. I thought 'twas a ghost.'"

Jennings—"CREEM. Sudden shivering. CREEMY. Affected with sudden shivering."

Williams—"CREEM. A cold shivering; to shiver; to crush or squeeze severely the limbs of a person." "CREEMY. Subject to shivers."

["CREEM, CREEMED, and CREEMING" are used about Looe. W. P.]

T. Q. Couch—"CREEM. To squeeze. It is metaphorically used to describe that sensation of rigor or creeping of the flesh which is known as *cutis anserina*; e.g. 'I felt a *creem* go over me.'"

Daniel—"Thee'rt *creeming* me to death." *Batch*, p. 36.

Cooke—"CREEM. To squeeze. A sudden shivering or rigor."

Mon. Mag.—"CREEM. To squeeze and as it were to cramp. *Eam.*" "A sudden shivering or rigor. *D.*" "CREEM'D. Having such a rigor. *D.*"

Ray, N.—"CREEM. '*Creem* it into my hand,' put it in slyly or secretly. *Chesh.*" *Eng. Dial. Soc.* B. 15.

Halliwel—"CREAM. To squeeze, or press. *West.* A cold shivering. *Somerset.*" "CREAMY. Chilly. *Devon.*"

Grose—"CREEM. '*Creem* it into my hand;' slide it slyly or secretly into my hand. *Chesh.*"

49. "CRICKLED" is used about Ashburton and Torquay.

Palmer—"CRICKLED. Gave away."

Rock—"CRICKLE-TO. To bend or submit." "I thort hur'd *crickle-to.*" p. 18.

Cooke—"CRICKLE-TO. To bend."

Hutton—"CRINCKLE. To recede or fall off from a promise or purpose." *Eng. Dial. Soc.* B. 1.

Halliwel—"CRICKLE. To Bend; to stoop. *Var. dial.*"

50. "CRIS-HAWK" is used about Torquay.

51. *Bray*—"Imagine the poor donkey, or a half-starved horse, laden first with a huge pack-saddle, never intended to bear anything else but a *crook*; and across this saddle is placed that very machine, which is made of wood, and so constructed as to keep from falling to the ground any load of peat, firewood, &c., that is frequently piled up twice as high as the poor beast that bears it. At either side of this machine arise two crooked pieces of wood, turning outwards like the inverted tusks of a walrus. . . . The *crook* is here known by the name of the Devil's toothpick." i 23-4.

"*Crooks*, implements, it is believed, peculiar to the West of England." ii. 353.

"CROOKS" is used about Ashburton and Torquay.

Rock—"CROOKS. Bent sticks to hold a horse-load on by hooks." "Urchy'th a-made 'e pair o' *crooks*." p. 20. [= Richard hath made you a pair of *crooks*. W. P.]

Vancouver—"The long *crooks* generally affixed to the pack-saddles, for the purpose of removing corn, hay, straw, turf, or faggots, from such hills and side lands as are deemed inaccessible to wheel-carriages, are formed to correspond to the curve of the pack-saddle, to descend rather below the horse's girth, there to curve outwardly, forming a bottom of from twenty inches to two feet in width; thence rise with a small inclination inwards, and to the height of about two feet eight inches, or three feet, above the line of the horse's back and withers. Within these *crooks*, which are placed two on each side of the pack-saddle, there is no difficulty in laying on any load, equal to the strength of the horses. Stronger and shorter *crooks* are used for the purpose of transporting boards, poles, and small sticks of timber." p. 217.

["CROOKS" is used about Looe. W. P.]

Mon. Mag.—"CROOKS. Long pieces of timber sharpened above and bent in a particular manner to support burdens on horses. They are, I believe, of aboriginal antiquity; but are used at this day only in Devonshire and in the Highlands of Scotland. In the narrow lanes of Devon, they occasion great inconvenience to travellers. But the number of *crooks* is diminished since the more frequent use of wheel-carriages. See *Hist. Views of Devon*, p. 203."

Halliwell—"CROOKS, The furniture of pack-horses; long pieces of timber, sharpened above and bent in a particular manner to support burdens on horses. *Devon*."

52. "Crope" is used about Ashburton.

Palmer—"CROPE. Creep."

Rock—"CROPING. Griping; stingy; penurious."

Pulman—"CROOP, or CROOPY-DOWN. To stoop in hiding.

'This lady tho' was *crope* aside,
As sche that wolde herselfen hide.'—*Gower*."

Jennings—"CRAUP. Preterite of creep."

"When tha dumbledores hummin, *craup* out o' tha cobwall."—p. 87.

Williams—"CROPE (Pret. of creep), Crept. 'A *craup'd* in.'"

Barnes—"CROOPY (A.S. *creopan*, to creep). To sink one's body, bending the thighs behind the legs."

Sandys—"CROPEING. Stingy."

Cooke—"CROPEING. Stingy; penurious."

Mon. Mag.—"CROPEING. Stingy; penurious. *C.*"

Halliwell—"CROOPY. To creep; to bend. *Dorset.*"

Chaucer—"Sir, I releasē thee thy thousand pound,
As thou right now were *crope* out of the ground."

Franklin's Tale, lines 11,917-8.

[The two meanings of CROPEING—*Creeping* and *stinginess*—appear to be sufficiently related to render it probable that the word is the same in both cases; the idea conveyed being *physically* mean in one instance, and *morally* in the other. W. P.]

53. *Walker*—"CROW. A piece of iron used as a lever."

Perry—"CROW. An iron lever."

"CROW-BAR" and "BAR-IRE" are used about Ashburton and Torquay.

["CROW-BAR" and "BAR-IRE" are used about Looe. W. P.]

Halliwell—"CROW. An iron gavelock. *North.*" "GAVEL-LOCK. The term is still used in the North for an iron crow or lever." "BAR-IRE. A crow-bar. *Devon.*"

[It is not easy to see why Mr. Marshall did not make two separate entries of *Crow-Bar* and *Bar-Ire*; for though the former is necessarily the latter, the converse is not true in all cases, since a *Bar-ire*, i.e. an *Iron-bar*, may or may not be furnished with a *crow* at one end; in other words, may or may not be a crowbar. W. P.]

54. "CROWNER, CROWNING, CROWNED" are used about Ashburton and Torquay.

Pulman—"CROWN. To hold an inquest. Hence CROWNER, a coroner; and CROWNER'S QUEST, an inquest."

Jennings—"CROWNER. A coroner." "CROWNED. To have an inquest held over a dead body by the coroner."

Williams—"CROWN, CROWNER'S QUEST. Coroner's inquest." "CROWNED. To have an inquest held over a dead body by the direction of the coroner."

["CROWNER," &c., are used about Looe. W. P.]

Tregellas—"CROWNIN'. Coroner's inquest." "There must be a *crownin'.*" *Tales*, p. 75.

Carew—"Yet al is good play, and never Attourney nor *Crowner* troubled for the matter." p. 75. "The Clarke of the market, *Coroners*, &c." p. 85. "*Crowning* of dead persons." p. 112.

Harland—"CROWNER. Coroner." *Eng. Dial. Soc. C. 1.*

Halliwell—"CROWN. To hold an inquest. *North.* See *Sharp's Chron. Mirab.* pp. 4, 88." "CROWNER. A coroner. *Var. dial.*"

Shakspeare—"The crowner hath sate on her."—*Hamlet*, v. 1.

"Crowner's-quest law."—*Ibid.*

55. "CRUEL" is used about Ashburton and Torquay.

Baird—"Ha let es voyce drap zoffly down

Ta zich a *cruel* quiet pitch." i. 56.

"I thort tha chap wiz *cruel* kine." ii. 33.

"Tha Queen zim'd *cruel* owt a pleace." ii. 35.

"I be veelin *cruel* wull." ii. 59.

Bowring—"Cruel hard." *Trans. Devon. Assoc.* 1866, p. 36.

Wilkey—"I should been 'cruel glad to ha' gone in." p. 2.

"'Tis *cruel* fine." p. 6.

"And *cruel* wisht did the poor veller look." p. 9.

"I zeed a zight o' *cruel* purty crayters." p. 11.

"You 'll vind it *cruel* slipper zur when you comes on half a mile vurder." p. 13.

Wolcot—"This, to be zure, look *cruel* kind."—*Roy. Vis.*

"That, you 'll zay, is *cruel* hard."—*Mid. Elect.*

Rock—"CRUEL. Very." "I own 'tis *cruel* sweet." p. 38.

Moore—"CRUEL. Very; as 'cruel good,' 'cruel kind.'"

Williams—"CRUEL. Intensive; as 'cruel kind,' very kind."

["CRUEL" is used about Looe. W. P.]

Cooke—"CRUEL. Very. 'Cruel good, *cruel* kind, sick, &c.'"

Mon. Mag.—"CRUEL. Very; *cruel* good; *cruel* sick. *C.D.* In Devon it is used as an amplifier in a more general manner. A Devonshire woman being told a surprising story, answered thus: 'Massy! massy! *cruel* soce! Unaquontabel-i! What do e tell aw! I don't at all doubt o't.' In Hampshire, *desperate* is used in the same sense."

Halliwell—"CRUEL. Very. *Var. dial.*" "Sad. *Exmoor.*"

Grose—"CRUEL. Very; extremely: as 'cruel cross,' very cross; 'cruel sick,' very ill." *Cornw. and Devonsh.*

56. *Palmer*—"CRUNEY. Whine."

Lock—"CREWNTING, or CRUNING. Groaning like a grunting horse."

Cooke—"CREWNTING. Grunting; complaining."

Mon. Mag. "CREWNTING, CRUNING. Grunting; complaining. *Exm.*"

Harland—"CRUNE. A complaining or angry noise made by a bull or cow." *Eng. Dial. Soc.* C. 1.

Ray N.—"CRUNE. Mugire Fortè à Saxonico *runian*, *susurrare*, mussillare. Nicholson [Probably not so; cf. Icel. *krúnk*, the cry of a raven.] *Ibid.*, B. 15.

Burns—"Now Clinkumbell, wi 'ratlin' tow,
Begins to jow and croon."—*Holy Fair*, st. 26.

Ye fright the nightly wanderer's way

Wi' eldritch croon.—*Address to the Deil*, st. 5.

"Come join the melancholious croon

O' Robin's reed!"—*Poor Mailie's Elegy*, st. 8.

"Yet crooning to a body's sel'

Does weel enough."—*Epistle to J. Lapraik*, st. 8.

Halliwell—"CROON. To bellow; to roar. *North.* Also to murmur softly." "CRUNE. To bellow; to roar. *North.*"

"CRUNEY. To whine. *Devon.*"

Grose—"CRUNE. To roar like a bull. *North.*"

57, 58. "CULVER" is used about Ashburton and Torquay.

[*Bouring* mentions CULVER as an obsolete Devonshire name for the pigeon. W. P.] *Trans. Devon Assoc.*, 1866, p. 18.

Rock—"CULVER. A wood pigeon." "Lick two *culvers* they'm a go." p. 23.

Pulman—"CULVER (A.S. *culfre*). The wood pigeon."

Moore, Cooke—"CULVERS. Pigeons."

Barnes—"CULVER (A.S. *Culfer*). A wood pigeon; a dove."

Bannister—"CULVER-LAND, CULVER PARK, CULVERY, CULVER HAY. Dovecot (*Clomiar*) Close."

Mon. Mag.—"CULVERS. Pigeons. *Exm.*"

Parish—"CULVER. A pigeon or dove. This name is retained in the name of a field at Selmeston, which is called the *Culverake* (the pigeon's oak)."

Ray, S. E.—"CULVER. A pigeon or dove; *ab* A.S. *culfre*, *columba*." *Eng. Dial. Soc.* B. 16.

Halliwell—"CULVER. A dove. (A.S.) The wood pigeon is so called in Devon." "CULVER-HOUSE. A pigeon-house."

Hearn—"CULVER. A dove, pigeon. *South* and *East*. 'Culver, a dove pigeon. The word *culver* (in the same signification) is used even now in some of the *South* and *East* parts of England' (R. G. *coluer*)." *Eng. Dial. Soc.* B. 14.

Grose—"CULVERS. Pigeons. *Exm.*"

Spenser—

"He had him snatch'd away
More light than *culver* in the falcon's fist."

Færie Queene, b. ii. c. vii. s. 34.

"Like as a gohawk, that in foot doth bear

A trembling *culver*."—*Ibid.*, b. iii. c. vii. s. 39.

"All comfortless upon the bared bough,
Like woful *culvers*, do sit wailing now."

Tears of the Muses.—*Euterpe*, lines 245–6.

"Like as the *culver*, on the bared bough,
Sits mourning for the absence of her mate."

Amoreth, or Sonnets, s. 88.

[The names of *Culver-hole Point*—a short distance east of Axmouth harbour—and of *Culver-hole farm*—about a mile inland from Branscombe Mouth, a little further east—are probably derived from *Culver*, a pigeon. W. P.]

59. *Walker*—"DASH. To confound; to make ashamed suddenly."

Palmer—"DASHED. Daunted."

Halliwell—"DASH. To abash."

60. [See "DICELS" in Miss Fox's list. W. P.]

"DISEL" is used about Ashburton; and "DISSEL" and "DASHEL" about Torquay.

Bowring—"MILKY DASHEL." *Trans. Devon. Assoc.*, 1866, p. 17.

Wolcot—"A *disell*, by an ass's jaws
Is thoft a pretty sallet."—*Mid. Elec.*

Rock, Pulman—"DASHEL. A thistle."

Moore—"DASHELS. Thistles."

["DISEL" and "MILKY DISEL" are used about Looe. W. P.]

Couch—"DISLE. The thistle."

Tregellas—"DISLES. Thistles." "The *disles* 'pon the hedge."
Tales, p. 38.

Cooke—"DISEL and DASEL. Thistle."

Mon. Mag.—"DASHEL. Thistle. D." "DISEL. Thistle. C."

Halliwell—"DASHEL. A thistle. *Devon.*"

[It appears, from the foregoing examples, that *Dashel* is the prevalent form in Devon, and *Disel* in Cornwall. W. P.]

[The habit of using *d* where *th* is commonly used, is prevalent in Devonshire, as the following examples show:—"Tha tucker was strick by *dinder*" (=the tucker was struck by thunder), *Rock*, 31. "Which Winter's self would *dore*" (= which Winter's self would thaw), *Rock*, 36. "When 'tes avrore . . . or *doveth*" (= when 'tis frozen or thaweth), *Lock*, 11. "I'd *drash* em aul wul" (= I'd thrash them all well), *Baird*, i. 26. "Ta *drash* an' *drash* ver moore 'n a nower," *Pulman*, 14. "Es *drash'd* en . . . to the true ben,

fath," *Lock*, 20. "*Drashel* an' mattick's all the zame t' he," *Rock*, 13. "Lik' *drashers* in a barn," *Pulman*, 68. "Truckl'd irt down in es *draut*" (= rolled right down in his throat), *Baird*, i. 31. "They've *draued* a wallage on" (= they threw a large quantity on), *Rock*, 9. "Jan *draued* a coping stone" (= John threw a coping stone), *Rock*, 34. "*Draw'd* her all along," *Palmer*, 33. "Tha mux a-tap the *drazel's* up ta hux" (= the mud 'on top of the threshold is up to hock bone), *Rock*, 3. "Th' stream looks like a silver *dread*," (*i.e.* thread) *Pulman*, 6. "Not a single *dred* upon me dry," *Pulman*, 35. "Ax'd vur *dree* *happerd* a nits" (= asked for three ha'porth of nuts), *Baird*, i. 19. "Two'r *dree* furns," (= two or three friends) *Pulman*, 47. "Theck whislin' wind an' *dretning* sky," (*i.e.* threatening sky) *Pulman*, 14. "Gied *drippence* moar," *Baird*, i. 9. "Jist gie old Nan a *drimpy* bit" (= just give old Nan a three-penny bit), *Baird*, 51. "I yeard the gladdies zing, and *drishes* too," (*i.e.* thrushes too) *Rock*, 16. "The pilm's a' go down my *droat*" (= the dust is gone down my throat), *Palmer*, 6. "To ha' et a *drode* vore agen" (= to have it thrown forth again), *Lock*, 13. "Rite *droo*, an niver scratch'd es leg," (= right through and never scratched his leg) *Baird*, i. 6. "All *droo* the spring," *Rock*, 23. "Down their *drot*," (*i.e.* throat) *Pulman*, 15. "Es can *drow* vore worse spalls" (= us can throw forth worse errors, *i.e.* remind you of worse errors), *Lock*, 13. "Stan' an' *drow* the'r tails," *Pulman*, 27. "*Drow'd* down my candle," *Palmer*, 2. "I've *drow'd* th' vly in lots of streams," *Pulman*, 5. "*Drowing* vore o' spalls," *Lock*, 17. "Her ne'er so much as *drows* et vore," *Palmer*, 9. "Hunt *dru* wet and dry," *Pulman*, 8. "Zum'ot, very hurrisome, went *dump*, *dump*, *dump*," (*i.e.* thump, &c.) *Palmer*, 2. "Th' blackbird, *dursh*, an' lark" (= the blackbird, thrush, and lark), *Pulman*, 27.

61. [The only person I ever knew, or heard of, who used DASHFUL for Bashful, was a farmer near Looe; and he was laughed at for it by even his labourers. The word was a novelty in that district. W. P.]

62. "DAVERED" is used about Ashburton and Torquay.

Baird—"Thay be looking za yellor as ole *dyver'd* hay." i. 11.

Bowring—"The *davered*, is now a *withered* flower." *Trans.*

Devon. Assoc., 1866, p. 17.

Palmer—"DAVERED. Withered."

Rock—"DAVER. To fade." "DAVERED. Faded; blighted."

"Now I be a *davered* thing." p. 23.

Pulman—"DAVER. To wither."

Moore—"DAVER. To fade like a flower." "DAVERED. Faded."

Jennings—"DAVER. To fade; to fall down; to droop."

Williams—"DAVVER, or DAVER. To fade; to droop." "DAVERED. Drooping."

Couch—"DAVERED. Faded; soiled."

Mon. Mag.—"DAVER. To fade like a flower. *D.C.* [*Lat. Cadaver*]." "DAVERED. Faded; withered, *D.C.*"

Halliwel—"DAVER. To droop; to fade."

Grose—"DAVER. To daver; to fade like a flower. *Devonsh.*"

63. *Parish*—"DENSHER PLOUGH. [*Devonshire plough (?)*]. An instrument used for turf-cutting."

Halliwel—"DENSHERING. See *Burn-beking*. No doubt from *Denshire*, as *Devonshire* was formerly called, as in *Collier's Old Ballads*, p. 87; *M. S. Ashmole*, 208."

Grose—"TO DENSHIRE, i.e. to *Devonshire* land. This is to pare the turf from off the surface, and to lay it in heaps and burn it: the ashes have been found greatly to enrich the barren land, on account of the fixed salt which they contain. This, probably, was first practised in *Devonshire*; whence it derived its name. It is now practised on all barren spungy lands throughout *England*, previous to ploughing. Land so prepared will bear two or three good crops of corn and must then be laid down again."

64. "DARNS" is used about *Ashburton*, and "DERNS" about *Torquay*.

Palmer, Lock—"DORNS. Door-Posts."

Rock—"Urn man, urn!"

Doant stand drabreeching to the *durn*." p. 16. [= Run in, man, run! Don't stand loitering at the door-post. *W. P.*]

Pulman—"DURNS. The side-posts of a door."

Jennings—"DURNS. A door-frame."

Williams—"DURNS. Side-posts of a door (? *Doorings*)."

Barnes—"DURNS. The upright posts of a door."

["DERNS" is used about *Looe*. *W. P.*]

T. Q. Couch—"DERNS. The wooden frame in which a door hangs."

Sandys—"DURNES. The side-posts of a door or gate." "DORN (*Cornish*). The door-post."

Carew—"For Windowes, *Dornes*, and Chimnies moore stone carrieth chiefest reckoning." p. 6. "The hewed stones of the windowes, *dournes* and clauels, pluct out to serue private buildings." p. 138.

Cooke—"DORNS. Door-posts."

Mon. Mag.—"DORNS. Door-posts. *D. DURNES. id. C.*"
"DURNES. The side-posts of a door. *C.*"

Halliwel—"DARNS. The door-posts. *Devon.*" "DOORN.
A door-frame. *Wilts.*" "DORNS. Door-posts. *Devon.*" "DURN.
A door or gate post. *Var dial.*"

Grose—"DORNS. Door-posts. *Exm.*" "DURN. Gate-posts.
North."

65. [See "DASHELS" in Mr. Marshall's list. *W. P.*]

66. "DIMMET" is used about Ashburton; and "DIMPSE"
about Torquay.

Lake—"DIMPSE. Twilight."

Baird—"In tha *dimpse* a nite." i. 58.

Bowring—"DIMMET." *Trans. Devon Assoc.*, 1866, p. 29.

Palmer—"DIMMET. Twilight."

Rock—"DIMMETT, DIMPSE. Dimlight; twilight."

"'Tis *dimmit* all ta me.

I dinnaw wher I'm gwain." p. 10.

"To the rebeck in the *dimpse*." p. 34. [= To the barn in
the twilight. *W. P.*]

Lock—"DIMMET. The dusk of the evening."

Pulman—"DUMPSY. Inclined to twilight."

Williams—"DUMPS. The twilight. 'Dumps of the yaven-
ing.' DUMPSY. Towards twilight."

["DIMPSE" is used about Looe, where "between the two
lights" (daylight and candle-light) is also applied to the time
of evening twilight. *W. P.*]

Cooke—"DIMMET. The dusk of the evening." "DUMPS.
Dimmet or twilight."

Mon. Mag.—"DIMMET. The dusk of the evening. *Exm.*"
"DUMPS, DIMPSE, DUMPSE, DIMMET. Twilight. *D.*"

Halliwel—"DIMMET. Twilight. *Devon.*" "DIMPSE, DUMPS.
Twilight. *Somerset.*"

Grose—"DIMMET. The dusk of the evening. *Exm.*"

67. "*Bray*—Constantly wagging his fan-tail of black and
grey feathers, an action which has procured for him the name
of the *dish-washer*." i. 319.

"DISHWASHER" is used about Ashburton and Torquay.

Bowring—"DISHWASHER." *Trans. Devon. Assoc.*, 1866, p. 18.

Rock—"DISHWASHER. The water wagtail." "WASH-DISH.
A wagtail."

Moore—"DISHWASHER. A wagtail."

Jennings—"WASH-DISH. The bird called wagtail."

Williams—"DISHWASH, or DIPPITY-WASHTY. A water wagtail." "WASH-DISH. The wagtail."

Barnes—"DISHWASHER. The wagtail: most likely so called, as Mr. Akerman says in his Wiltshire glossary, from the constant sweeping motion of his tail. WASH-DISH. Same as DISHWASHER."

["DISHWASHER" is used about Looe. W. P.]

Cooke—"DISHWASHER. A wagtail." "WASHDISH. A wagtail."

Mon. Mag.—"DISHWASHER, DISHWASH. A water wagtail. C. D."

Parish—"DISHWASHER. The water-wagtail."

Hallivell—"DISHWASHER. The water-wagtail."

69. "DOUST" is used about Ashburton and Torquay.

Palmer—"DOUST. Chaff."

Rock—"DOUST. Chaff; barn dust."

Barnes—"By the zae-pit's *dousty* bank."—*Dock-leaves*.

"Voke that vollied in a crowd

Kick'd up the *doust* in such."—*Whitsuntide Club W'a'ken*.

[DOUST and DUST seem to be nearly synonymous according to Mr. Barnes. W. P.]

["DOUST" is used about Looe. W. P.]

Couch—"DOUST. Dust from winnowing."

Tregellas—"DOWST. Dust from winnowing corn." "His bed-tie may be stuffed with hair, or may be 'twas a *doust* one." *Tales*, p. 144.

Hallivell—"DOUST. Dust, powder. *West*. 'Grinde it all to dust.' *Forme of Cury*, p. 28."

[My Ashburton informant states that "Wut *doust* is best for stuffing bed-ties, because tes the plumpest;" i.e. Oat *doust* or chaff is best for stuffing or filling bed-ticks, because it is the softest kind of chaff. W. P.]

70. "DRAGS" is used about Ashburton and Torquay.

Vancouver—"After harvest, the tormentors, *drags*, and harrows, are applied to the thinly-skirted surface." p. 161.

Mon. Mag.—"DRAG. A heavy harrow to break the clods in stiff land. D."

Hallivell—"DRAG. A heavy harrow used for breaking clods in stiff land. *Var. dial.*"

71. "DRANG" = a ditch, is used about Ashburton; and = a narrow passage, about Torquay.

Lake—"DRANG-WAY. A recessed portion of a street; a narrow passage or lane ending in a *cul-de-sac*."

Rock—"DRANG. A narrow passage." "Droo iv'ry hole and *drang*." p. 25.

Pulman—"DRANG, or DRANG-WAY. A very narrow enclosed path or lane, an alley."

Jennings—"DRANG. A narrow path."

Williams—"DRANG. A narrow path or lane."

Barnes—"DRONG, or DRONG-WAY (A.S. *Thringan*, to compass). A narrow way between two hedges or walls."

["DRANG." A recessed portion of a street ending in a *cul-de-sac*, is used about Looe. W. P.]

Couch—"DRANG. A narrow pass. (A.S. *thrang*, from *thringan*, to press, squeeze, or thrust.)"

Sandys—"DRANG. A gutter or drain."

Cooke—"DRANG. A narrow passage, lane, gutter, or wheel rut."

Mon. Mag.—"DRANG. A narrow passage between two houses; a narrow lane. *D*. A gutter, a wheel rut. *C*."

Halliwel—"DRANG. A narrow path, or lane. *West*." "DRONG. A narrow path. *West*."

Grose—"DRANG. A narrow lane or passage. *Devonsh*."

72. "DRASHEL" is used about Ashburton and Torquay.

Rock—"DRASHEL. A flail (qy. a thrash-all)"

"Jim's no drumble drane,
Drashel and mattick's all the same
T' he." p. 13.

Pulman—"DRASHELL. A flail."

Moore—"DRASHEL. A flail."

Jennings—"DRASH. To thresh." "DRASHEL. A flail." "DRASHER. A thresher."

Williams—"DRASH. To thresh." "DRASHEL, or THRASHLE. A flail. (A.S. *therscel*.)"

Barnes—"DRASHEL. A.S. *therscel*. A flail. 'He afeormath his *thyrscel* flore.' (Matt. iii. 12.) Also a threshold. This word affords one of many instances in which the rustic dialect is full and distinctive, while English is defective. The *drashel*, in English the *flail*, consists of two staves; the *handstaff*, and the *vlail*,—*flail* or *flegel*, flying staff, from the Anglo-Saxon *fleogan*, to fly,—connected with the handstaff by a free socket called a *runnen kipla*; a capel from the Anglo-Saxon *Ceafe*, a beak or nozzle; so that the flail is only one part of the tool, for which the English has no name."

[The *oldil* or *flying staff*, as described by Mr. Barnes, recalls the following lines in Burns :—

"The thrasher's weary *fingin'-tres*
The lee-lang day had tired me."

The Vision—Duan First, st. 2. W. P.]

["DRASH, DRASHING, DRASHEL, DRASHER" are used about Looe. W. P.]

Couch—"DRASHEL. The flail."

Daniel—"Then with an effort up he rose
In spite of bruises, and of blows,
And to the mare in trouble sped,
Alas ! the chesnut mare was dead—
He lifted up a leg, and then
Looked grave, and let it drop again—
'Iss broke to *drashles* iss they be,
The fore ligs from huff, to knee.'"—*Companion*, p. 27.

Cooke—"DRASHAL. A flail."

Mon. Mag.—"DRASHAL for THRASHAL. A flail. D."

Halliwel—"DRASH. To thresh. *Somerset*." "DRASHELL. A flail. *West*." 'DRASHER. A thrasher. *Somerset*."

74. "DATCH" is used about Ashburton and Torquay.

["DATCH" is used about Looe. W. P.]

Couch—"DATCH. Thatch."

Daniel—"Like a piece ov *datch*,
'Twas al wan vlame ov vire."—*Batch*., p. 8.

75. "DRAW" is used about Ashburton and Torquay.

["DRAW" is used about Looe. W. P.]

76. "DRAY" is used about Ashburton and Torquay.

["DRAY" is used about Looe. W. P.]

Halliwel—"DRAY. A sledge without wheels. *West*. 'Dray or sleade whych goeth without wheelles, *traha*.' *Huloet's Abc*. 1552."

77. "DRESKEL" is used about Ashburton and Torquay.

Palmer—"DREKSTOOL. Threshold."

Rock—"DRAXEL. A threshold."

Fulman—"DRASHEL. A corruption of threshold."

Jennings—"DRASHEL. The threshold ; a flail."

Williams—"DRASHOLD, or DRESHOL. A threshold."

Barnes—"DRASHEL. (A.S. *Therscel*.) A flail. Also a threshold."

["DREXEL," or "DREKSEL," is used about Looe. W. P.]

Couch—"DRAXEL. The threshold."

Garland—"DREXLE. Threshold; door step."

Cooke—"DRASHEL. Threshold of a door."

Mon. Mag.—"DREEKSTOOL. The threshold of a door. C.D."

Halliwell—"DRASHEL. A threshold." "DRESHFOLD. A threshold. Chaucer."

78. "DRINGET" is used about Ashburton.

Baird—"Wiz *dring'd* up za close that ha cud'n come owt."

ii. 22.

Wilkey—"There was such a *dringet* coodn't zee."

Wolcot—"Huzzain, trumpetin, and *dringin*." Roy. Vis.

"They all march'd off, a clever *dring*." Ibid.

Palmer—"DRING. Squeeze."

Rock—"DRING. To throng; to squeeze." "DRING, DRINGET. A throng; a crowd." "Ot's the *dringet* ta the door?" p. 19. "A thousan' happy fancies *dring*." p. 37.

Pulman—"DRING, DRINGET. A throng." "DRING, or DRINGY. To squeeze in a crowd.' 'Māācy wull! Don't ée *dringy* zo.'"

Moore—"DRING. A crowd."

Jennings—"DRING. To throng; to press as in a crowd; to thrust." "DRINGET. A crowd; a throng."

Williams—"DRING (pret. *Drang*). To throng; crowd." "DRINGET. A crowd (Dutch, *dringen*, to press)."

Barnes—"DRINGE, or DRUNGE (A.S. *thringan*). To squeeze or push, as in a crowd. 'Don't ye *dringe* oone zoo.'"

["DRING." To squeeze, as in a crowd; and "DRINGED UP," having insufficient room, are used about Looe. W. P.]

Daniel—"But ther was sitch a okkord *dring*." Mary Ann. p. 21.

Cooke—"DRING, DRINGET. A crowd; press of people."

Mon. Mag.—"DRING, DRINGET. A press of people; a crowd. D.C. DRINGING. Crowding. D.C."

Marshall. 1—"THRONG (vulg. *thrang*). Busily employed; 'desperate *thrang*,' very busy." Eng. Dial. Soc. B. 2.

Willan—"THRANG. Very busy. [And in N. Yorksh., a crowd of people, a throng]." "THRING. To thrust; to press; to squeeze." Ibid. B. 7.

Halliwell—"DRINGETT. A press, or crowd. Devon." "DRUNGE. A pressure, or crowd. Wilts." "THRANGE. To crowd; to squeeze. North.

'At morne when day sprange,
Gentyl men to haruds *thrang*,
Syr Degratelle was dyght.' Eglamour, 1109."

79. *Moore*—"DRUDGE. A large team rake."

80. *Walker*—"DUMP. Sorrow; melancholy; sadness. A low word used generally in the plural; as to be in the *dumps*." "DUMPISH. Sad; melancholy; sorrowful."

Perry—"DUMP. Sorrow; melancholy; reverie." "DUMPISH. Sad; sorrowful." "DUMPS. A fit of sullenness."

"DUMPS" is used about Ashburton and Torquay.

Pulman—"DUMPS. Twilight. To be 'down in the dumps' means that a person is out of spirits. In *Chevy Chase* a warrior whose legs are cut off is described as being in 'doleful dumps.' So in Holland's *Livy*, the Romans defeated at Cannæ are said to be 'in the dumps.'"

Barnes—"DUMPY (From *dump*, a heavy mass). Short and thick. Thence *dumpling*, a little dump. 'Down in the dumps.' Down in the heavy feelings."

["DOWN IN THE DUMPS" is used about Looe. W. P.]

Hallivell—"DUMP. A melancholy strain in music. *To be in the dumps*; i.e. out of spirits. There was also a kind of dance so called. It is alluded to in *Gosson's School of Abuse*, 1579. *To put one to the dumps*, to drive him to his wits' ends."

Prince—"Which put them in a marvellous *dump* and sadness."

p. 157.

Shakspeare—"Tune a deploring *dump*."—*Two Gen. of Ver.* iii. 2.

"Sing no more ditties, sing no mo

Of *dumps* so dull and heavy."—*Much Ado*, song, ii. 3.

"Play me some merry *dump* to comfort me."—*Rom. & Ju.* iv. 5.

"Doleful *dumps* the mind oppress."—*Ibid.*

"Relish your nimble notes to pleasing ears;

Distress like *dumps* when time is kept with tears."

Rape of Luc., st. 161.

Spenser—"New year, forth looking out of Janus gate,
Doth seem to promise hope of new delight:
And, bidding th' old adieu, his passed date
Bids all old thoughts to die in *dumpish* sprite."

Sonnet iv.

"There let no thought of joy, or pleasure vain,
Dare to approach, that may my solace breed;
But sudden *dumps*, and dreary sad disdain
Of all world's gladness, more my torment feed."

Sonnet, l. 11.

Surrey—"My sinews dull, in *dumps* I stand,
No life I feel in foot nor hand."

Restless State of a Lover, lines 93-4.

Percy—"Where griping grefes the hart would wounde
And dolefull *dumps* the mynde oppresse,
There musicke with her silver sound
With spedé is wont to send redresse."

A Song to the Lute in Musicke, st. i.

"For Witherington needs must I wayle,
As one in doleful *dumpes*;
For when his leggs were smitten off,
He fought upon his stumpea."

More Modern Ballad of Chevy Chase, lines 209-12.

[The Rev. Geo. Gilfillan remarks to the effect that it was not Witherington, but the bard who was in "doleful dumpes." He adds that "the old MS. reads wofull dumpes."

The corresponding lines in *The Ancient Ballad of Chevy Chase* are

"For Wetharryngton my harte was wo,
That ever he alayne shulde be;
For when both his leggis were hewyne in to,
Yet he knyled and fought on hys kne."

Some of the foregoing quotations from the older authors apparently lead to the conclusion that DUMP did not formerly and of itself necessarily convey the idea of sorrow, or melancholy, or sadness. Thus Shakspeare makes Peter ask the musicians to play him "some *merry dump*." Moreover, he elsewhere describes the character of the dump or dumps by using suitable adjectives; thus, "a *deploring dump*," "dumps *dull and heavy*," and "*doleful dumps*." W. P.]

81. "DWAM" is use about Torquay.

Garland.—"SOG. Half asleep, a DWAWM."

Gaskell.—"Yo're sure and certain she's dead—not in a *dwam* a faint? *North and South*." Chap. xxviii.

82. "EARTH-RIDGE" is used about Ashburton and Torquay.

Halliwell.—"EARTH-RIDGE. A few feet of earth round a field which is ploughed up close to the hedges, and, sometimes after having produced a crop of potatoes, is carried out into the field for manure, and there mixed with dung, sand, &c."

83. "AYVER" is used about Torquay.

Rock.—"HAYVOR-SEED. Grass seed (qy. Seed for hay)."

Pulman.—"EVER-GRASS. Rye-grass."

Vancouver.—"RYE-GRASS, or *hievre*," pp. 201, 288, &c. &c.

["HAYVER" and "AYVER" are used about Looe. W. P.]

• *Couch*.—"EAVER. The grass, *Lolium perenne*."

Bannister.—"EAVER CROFT. *Eaver*, grass croft." "EVA-PARK, EVAR-PARK, EVER-PARK, same as EAVER-PARK."

Halliwell.—"EVER. Rye-grass. *Devon*."

85. "EVIL" is used about Ashburton and Torquay.

Rock.—"EVIL. A three-pronged fork." "A slinnaway stram

from Balsden's *evil*," p. 31 [= A slanting hard knock from Balsden's three-pronged fork. W. P.]

["EVIL" and "YEWL" are used about Looe as names for three-pronged forks. W. P.]

Couch—"YEWL. A three-pronged agricultural tool. (In some parts of Cornwall called EVAL.)"

Fox—"When a gote en eis tantrums, a wilfull ould Devel,

A slam'd the poor Soal on tha head we a *Yewel*."—*Dolly*, p. 46.

Garland—"EVIL. A three-pronged fork."

Mon. Mag.—"EVIL. A three-pronged fork. C."

Halliwell—"EVIL. A fork, as a hay-fork, &c. *West*."

Grose—"YEEVIL. A dung-fork. *Exm*."

[EVIL, EVAL, YEEVIL, YEVEL, and YEWL, shown by the foregoing quotations to be different names for the same tool, are probably but different forms of the same word, the first becoming the last by taking *y* as a prefix, and having the *e* replaced by *w* or *u*.

That many words, written without it in our recognized English dictionaries, have *y* as their initial letter in many parts of Devonshire, is obvious from the following passages:—"Gie tha . . . that prime *yaffer*" [= give thee that prime heifer), *Rock*, 21. "Risk th' shuttin off yer *yarm*" [= risk the shooting off your arm), *Pulman*, 56. "We've *yarned* anew vor eette Bob" (= We've earned enough for little Bob), *Rock*, 13. "Es . . . collar lied down *yauwer* es kwoat," (i.e. over his coat) *Pulman*, 55. "A *yaw* that's ther" (= a ewe that's there), *Rock*, 12. "Chell make thy *yead* addle" (= I will make thy head addle), *Lock*, 10. "Thicky tale you ant a *yeard*" (= that tale you have not heard), *Baird*, i. 53. "I *yeard* the gladdies zing," *Rock*, 16. "Thee art a lams'd in wone of thy *yearms*" (= thou art lamed or disabled in one of thy arms), *Lock*, 11. "Chell lay tha over the *years* wey the vire-tangs" (= I will strike or beat you over the ears with the fire-tongs), *Lock*, 9. "Ketch'd *yeat* 'pon thy zslides" (= caught heat upon thy slides), *Pulman*, 71. "Cast a top tha *yeath*" (= cast on the hearth), *Rock*, 36. "In the desk of the *yeaveling*" (= in the dusk of the evening), *Lock*, 13. "Yen ma thick Cris'mus brawn" (= hand me that Christmas brawn), *Rock*, 3. "Thou cortst tha natted *yeo*" (= thou caught the hornless ewe), *Lock*, 14. "I wis mused vur ta *yer* min" (= I was amused to hear them), *Baird*, i. 17. "Tha genelvoks *yer* may du jist as they plaize," *Baird*, i. 7. "Let's *yer*!" (= let us hear), *Rock*, 12. "*Yer* be the voaks," *Rock*, 26. "*Yer*'d min inzide" (= heard them inside), *Baird*, i. 7. "*Yer*'s zum *yerly* ehibbol" (= here's some early small onion), *Rock*, 6. "Thare

yers wis pricked" (= their ears were pricked up), *Baird*, i. 57. "Tha yet an tha drink zim'd ta warm up thare harts" (= the heat and the drink seemed to warm up their hearts). *Baird*, i. 48. "Yett theesel, Bob" (= heat thyself, Bob), *Rock*, 5. "Zit there, summer yewlings" (= sit there, summer evenings), *Palmer*, 58. "Spudlee out the yewmors" (= stir the embers with a little spud or poker), *Lock*, 15. "As I've a yird people zay" (= as I've heard people say), *Pulman*, 29. "Kum auver yur" (= come over here), *Baird*, i. 43. It will be observed that in some of the foregoing examples, the letter *y* has been substituted for the initial *h*. This also occurs in the word *Heathfield*, which I have heard pronounced *Yaffel*, or *Yeffel*, about Tavistock and Bovey Tracey; and it appears to be pronounced *Yeaff-field*, about Exmoor (*Lock*, 12).

Examples of the substitution of *w* or *u* for *v*, or it may be the elision of the *v* merely, are probably not so numerous, but the following will suffice to show the existence of the habit:—"Jumpt *abew* ground" (= jumped above ground), *Palmer*, 8. "*Dowl* take the lamiger Methodie" (= devil take the lame Methodist), *Rock*, 33. "The *dowl* vetch tha"), *Lock*, 8. "DULE. Devil," *Pulman*, 93. "Gurt wi' drooling Nan" (= great with drivelling Nan), *Rock*, 34. "DROOL. To drivel as an infant, *Pulman*, 92. *Drool* and *Drooling* are sometimes written *Drewl* and *Drewling*. "T'es a marl if e'er tha comst to *hewn*" (= 'tis a marvel or wonder if ever thou comest to heaven), *Lock*, 16. "His bandy legs, and *shewl*-a-mouth, (*i.e.* shovel-mouth) *Palmer*, 11. "They be *shooling* o' beat" (= they are shovelling beat), *Lock*, 14. "Sexton's *shoul*," (*i.e.* shovel) *Rock*, 28. "Wi' shoulder'd *shule* an' peckiss, rathe" (= with shouldered shovel and pickaxe, early), *Pulman*, 22. "E'er zince tha wart twonty, ay *zewnteen*" (= Ever since thou wert twenty, aye seventeen), *Lock*, 8.

It may not be out of place to remark that the letter *v* is frequently entirely elided. Thus: "The lamb's dally bones you *geed* me," *Palmer*, 51. "*Gie* the wul zow her hire" (= give the old sow what she deserves), *Pulman*, 31. "Upon the zess last *harest*" (= upon the pile of sheaves last harvest), *Lock*, 8. "What have I done to 'sar such bliss?" (= what have I done to deserve such bliss?) *Rock*, 37. "They'll nivver be *sard* by I" (= they'll never be served by I), *Pulman*, 31. "A good steddy *zarrant* can do oll thes" (= a good steady servant can do all this). *Lock*, 22. "Tha wut purty a *zennet* arter" (= thou wilt be silent and sullen a seven-night after), *Lock*, 13. W. P.]

86. "VARE" is used about Torquay.

Moore—"FAIRIES, or VAIRIES. Squirrels."

Jennings—"VARE. A species of weasel."

"Aw how she birshed the grass along,
As liassom as a *vairy*!" p. 85.

Williams—"FAIRY, FARE, VARE. A weasel (old Fr. *vair*, ermine)." "VARE. Weasel or stoat. VAIR. Ermine."

Couch—"FAIRY. A weasel."

Parish—"PHARISEES. Great uncertainty exists in Sussex as to the definition of this word according to its acceptance in the minds of country people, who always connect it with *fairieses* (their plural of *fairy*). A Sussex man was once asked, 'What is a *pharisee*?' and answered, with much deliberation and confidence, 'A little creature rather bigger than a squirrel, and not quite so large as a fox,' and I believe he expressed a general opinion.

Since writing the above, I find that polecats are called *varies* in Devonshire; so that possibly the person who gave this answer had been brought in contact with some west-country folk, and had heard the word from them. It is not Sussex." [Yet Mr. Parish says the man, in his answer, expressed a general opinion. W. P.]

Hallivell—"FAIRY. A Weasel. *Devon*." "VAIRE. A kind of fur supposed to be that of a species of weasel still so called."

87. "FERN-WEB" is used about Ashburton.

Hallivell—"FERN-WEB. A small beetle, very injurious to the young apple. *West*."

88. "FETHER-LOCK" and "VETHER-LOCK" are used about Ashburton and Torquay.

89. *Hallivell*—"FLAP-DOCK. Fox-glove. *Devon*."

90. "FLOSHED" is used about Ashburton and Torquay.

Palmer—"FLOSHED. Spilt."

Garland—"FLOSH. To spill; shake over."

Tregellas—"FLOSH. Spill."

"To wash his hands and save the *floshing*,
Outside the door Jim did his washing."—*Tales*, p. 45.

Cooke—"FLOSHED OUT. Dashed out."

Parish—"FLOUSH-HOLE [*Fluisen*, Dutch, to flow fast]. A hole which receives the waste water from a millpond."

Hallivell—"FLOSH. To spill; to splash. *South*. Hence *Flosh-hole*, a hole which receives the waste water from a mill-pond."

91. "FRAPE" is used about Ashburton and Torquay.

Lake—"FRAPE. To wrap round; to bandage."

Palmer—"FRAPED, VRAPED. Drawn tight."

Rock—"FRAPE. To draw tight; to brace." "Her used vor slammocky hur dress, but now hur *frap'th* up tight." p. 8.

["FRAPE" is used about Looe. W. P.]

Couch—"FRAPE. To bind."

Mon. Mag.—"FRAPED. Confined; kept back, as applied to hair. *N. D.* 'Cryle, how times be altered! Their mothers *wear'd* their hair *fraped* back-way, a forehead cloth under their *dowdes*, and little baize rockets and blue *aperns*. They *wednt* know their own *childern way* their frippery gauzy geer, and their *fallals* to their elbows; and their *pie-picked* flimzy *skittering gownds*, reaping in the *mux*, or *vaging* in the wind.'"

[This passage, quoted by the writer in the *Monthly Magazine*, is from the *Devonshire Courtship*, p. 17, but not from the same edition as that which I possess, or it is copied incorrectly. In my copy it is, "What a flash they cut. If their mothers was to peep out o' their graves they widn't know their own children so transmogrified. Their mothers wared their hair *vrappt'd* back with a vorehead cloth, and little baize rockets and blue *aperns*. Well sose, what will this world come to!" "Their pie-pick'd, skittering, flimzy gownds, vaggng in the wind, or reeping in the *mux*," occurs earlier in the same paragraph, which contains nothing about "frippery gauzy geer," or "their fallals to their elbows." W.P.]

Hallivell—"FRAPED. Drawn or fixed tight. *Devon*. See Bourne's *Inventions or Devises*, 1758. No. 14." "VRAPED, Drawn tighter. *Devon*."

92. "FRENCH-NUT" is used about Ashburton and Torquay.

Pulman—"FRENCH-NUT. The walnut. (G) *wallis*, a foreigner; hence the word Welsh, used by the Anglo-Saxons." "WELSH-NUT. A walnut. *Welsh* and *wal* are from the Anglo-Saxon *Wealas*, the Welsh (British) or *Weallisc*, British, or foreign."

Jennings—"FRENCH-NUT. A walnut. WALNUT. The double large walnut. The ordinary walnuts are called *French nuts*."

Williams—"FRENCH-NUT. Walnut." "WELCH-NUT. Walnut. (Ger. *Welsche-nüss*.)"

Barnes—"WELSH-NUT. A walnut. The affixes *Welsh* and *Wal* are both from the Anglo-Saxon *Wealas*, the Welsh or

foreigners; or *Weallisc*, British or foreign; which seems to show that the walnut was unknown to the Anglo-Saxons till they came to Britain."

["FRENCH-NUT" and (less frequently) "WALNUT" are used about Looe. W. P.]

Mon. Mag.—"FRENCH-NUTS. Walnuts. C."

Halliwell—"FRENCH-NUT." A walnut. *West.*"

93. "FREATHING" and "VREATHING" are used about Ashburton and Torquay.

Palmer—"FREATHED. Wattled." "VREATH. A low hedge."

Rock—"FREETH (*gy. Wreathe*). To wattle; to mend the hedge." "FRITH (*gy. Writh*). Brushwood." "When 'e *vreeth* tha hadge." p. 20.

Pulman—"VRITH (*frith*). Brushwood."

Moore, Barnes—"FRITH. Brushwood."

Couch—"FREATH. A wattled gap in a hedge."

Bannister—"FREETHING. FRETH. Field with a wattled (*frith*) hedge or gate."

Carew—"Round about the pond there is pitched a *frith* of three foote heighth." p. 104.

Cooke—"FRITH. Writh. Underwood."

Mon. Mag.—"FRITH. WRITH. Underwood. D. Wattles or hurdles placed in a gap. C."

Ray, N.—"FRITH. Underwood, or the shroud of trees. *More's Note, Ray 2.*" *Eng. Dial. Soc.* B. 15.

N. & Q.—"Near Aldwick, the word *Frith* (pronounced *Fright*) is applied 'to green branches of trees laid between posts, driven into the hard beach, and fastened down by cross pieces of wood nailed thereto' . . . twenty sets or so of these making a *frith groyne*, to arrest the shifting of the shingle." 2nd S. vi. 527. "In the Weald of Kent *frith* (pronounced *fright*) signifies a wood." 3rd S. iv. 491.

Halliwell—"FRITH. A hedge or coppice. See *Will. and the Werwolf*, p. 30. 'Also there is difference between the *fryth* and the fell; the fels are understood the mountains, vallyes, and pastures with corne, and such like; the *frythes* betoken the springs and coppyses.' *Noble Art of Venerie*, 1611, p. 98. Drayton explains it 'a high wood,' a sense it seems to bear in *Ywayne and Gawin*, 157, 1688; *Minot*, p. 9; *Sir Amadus*, 546; *Cov. Myst.*, p. 264; *Piers Plowman*, pp. 224, 241, 355; *Const. Mas.*, 6, 266; *Auturs of Ariher*, i. 8, iv. 10. A distinction between *frith* and wood seems to be made in *Will. and the Werwolf*, p. 80, 'out of forests and *frithes* and alle fair wodes.' Some writers explain it to mean 'all

hedgewood except thorns,' a sense still used in the provinces, and it occurs in the local glossaries with the following meanings:—unused pasture land; a field taken from a wood; young underwood; brushwood. Many woods in Kent are still called *friths*. *Frythed*, wooded. *Piers Plowman*, p. 112. '*Frith*, to plant a hedge. *Devon*.' Dean Milles' MS.

'The steward Sir Gaymere,
And mony gud sqwyere,
The broght hame on bere
Fra *frythis* unfayne.'—*MS. Lincoln*, A. i. 17, f. 137."

"*VREATH*. A low hedge. *Devon*." "*VRITH*. The bindings of hedges. *South*."

Grose—"FRITH or VRITH. Underwood, fit for hurdles or hedges. *West*."

94. *Bray*—"The *furze-chatterer*, it is probable, admires our golden bushes, from which he takes his name, as much as did Linnæus himself, since he regularly frequents them; and there, if he is not seen he is constantly to be heard; and, like most great talkers, repeats the same note over and over again." i. 320.

"FURZE-CHAT" is used about Ashburton and Torquay.

["FURZE-CHAT" is used about Looe. W. P.]

95. "*GANTIN*." Tall and straight, is used about Ashburton. *Palmer*—"GALAGANTING. Large and awkward." (Query, if from *Garantua* in Rabelais?)

Jennings—"GALLANTING, GALLIGANTING. Wandering about in gaiety and enjoyment: chiefly to associations of the sexes."

["GALLIGANTING." Large and awkward, is used about Looe. W. P.]

Mon. Mag.—"GALLIGANTING. *N. D.*"

Halliwell—"GALAGANTING. Large and awkward. *West*."
"GALLIGANTUS. Any animal much above the usual size. *Glouc*."

96. "*GALE*" is used about Ashburton and Torquay.

Jennings, Williams—"GALE. An old bull castrated."

Garland—"GALE. A childless man."

Sandys—"GALE. An ox."

Mon. Mag.—"GALE. An old bull castrated. *C*. A gelt bull; an ox; a bull stag. *D*. *Dean Milles*."

Halliwell—"GALE. A castrated bull. *West*."

Grose—"GALE. An old bull, castrated. *Hants*."

97. "GALLIED" is used about Ashburton and Torquay.

Baird— "Varmer Plant, I've yerd 'n zay,
Was gally'd zo, ta urn away
Ha cud 'n." i. 58.

Palmer, Rock—"Gallied. Frightened."

Pulman—"GALLY (from the A.S. *gælan*). To frighten; to intimidate."

Moore—"GALLY. To frighten."

Jennings—"GALLISE. The gallows." "GALLID. Frightened."
"GALLY. To frighten."

Williams—"GALLY, GALLOW. To frighten." "GALLIED. Frightened."

"Skies gallow the wanderer."—*K. Lear*, iii. 2.

[The exact passage in Shakspeare, quoted by Messrs. Williams and Jones, is—

"The wrathful skies
Gallow the very wanderers of the dark." W. P.]

Barnes—"GALLY (A.S. *gælan*, to hinder). To frighten as from one's action." "GALLY BEGGAR. A scare beggar; a bugbear." "GALLY-CROW. A scarecrow."

["GALLITRAPS," as a depreciative for dress, or tools, or equipments, is used about Looe. W. P.]

Cooke—"GALLIED. Frightened." "GALLY. To frighten. *D.*"

Mon. Mag.—"GALLIED. Frightened." "GALLY. To frighten."

Hallivell—"GALLY. To frighten; to taunt; to harass; to hurry. *West.* Moor mentions an apparition called a *gally-trot*." "GALLY-TRAPS. Any frightful ornaments, head-dresses, hoods, &c. *Glouc.*"

Grose—"GALLIMENT. A great fright. *Exm.*" "GALLIED. Frightened. *Exm.*"

98. *Walker*—"GAWK. A cuckoo; a foolish fellow."

Perry—"GAWK. A cuckoo; a silly fellow."

"GAWK" is used about Ashburton and Torquay.

Pulman—"GAWK. The cuckoo."

Jennings—"GAWCUM. A simpleton; a gawkey. 'Go whim again yea gawky.'" p. 95.

Williams—"GAWCUM, GAWCUMIN. A simpleton; a gawkey."

["GOOKOO" is the name for the cuckoo about Looe. W.P.]

Couch—"GAWKY. Stupid; foolish (*C. gog*, a cuckoo. A.S. *gaec*, *geac*, a cuckoo.)"

Hallivell—"GAWK. Clownish; awkward. *Var. dial.* A cuckoo; also a fool. *North.*" "GAWK-A-MOUTH. A gaping fool. *Devon.*"

Grose—"GAWKY. Awkard; generally used to signify a tall awkward person. *North*."

99. "GLAMED" is used about Ashburton.

Palmer—"GLAM. Sore."

Lock—"GLAM. A wound or sore."

Halliwell—"GLAM. A wound or sore. *Devon*."

Grose—"GLAM. A wound or sore. *Exm*."

100. *Walker*—"GLUM. Sullen; stubbornly grave. A low cant word."

Perry—"GLUM. Sullen; sour; grave; stubborn."

"GLUMPING" is used about Ashburton and Torquay.

Palmer—"GLUMPING. Sullen."

Lock—"GLUMPING. Looking sullen; dark and lowering; gloomy, or glum."

Pulman—"GLUM, or GLUMPY. Gloomy."

["GLUM" and "GLUMPING" are used about Looe. W. P.]

Daniel—"In a cawnder sqots and *glumps*." *Wit*. p. 6.

Garland—"GLUMP. Sulkiness; ill-temper."

Parish—"GLUM [*Glóm*, Ang. Sax., gloom]. Gloomy. 'The weather looks very *glum* this morning.'"

Harland—"GLUMPY. Sulky; in the dumps." *Eng. Dial. Soc.* C. 1.

Thoresby—"GLAWM. To look sad [*i.e. glum*]." *Ibid.* B. 17.

Ray, N.—"GLUM. To look sadly, or sourly; to frown, contracted from *gloomy*; a word common to the vulgar, both in the *North* and *South*." *Ibid.* B. 15.

Halliwell—"GLUM. Gloomy; overcast; sullen. Also, a sour, cross look. *Var. dial.*" "GLUMPING. Surly; sulky. *Var. dial.*" "GLUMPSE. Sulkiness. *North*. The adj. *glumpy* is very common."

Grose—"GLUM. Gloomy; sullen. *Norf*." "GLUMPING. Sullen, or sour-looking. *Exm*."

101. *Bray*—"The yellow hammer . . . is here known by no other name than the one which so truly expresses his character—the *gladdy*; and it does, indeed, glad one's eyes to see him." i. 319.

"GLADDY" is used about Ashburton and Torquay.

Bowring—"The *golden-gladdie*." *Trans. Devon. Assoc.*, 1866, p. 18.

Rock—"GLADDIE. The yellow hammer." "Thees morn I yeard the *gladdies* zing." p. 16.

["GLADDIE" is used about Looe. W. P.]

Couch—"THE GLADDY. The yellow hammer."
Halliwell—"GLADDIE. The yellow hammer. *Devon*."

102. "GRAIL" is used about Ashburton and Torquay.

103. "GRAINY" is used about Ashburton and Torquay.

Palmer—"GRAINEE. Proud; ill-tempered."

["GRAINY" is used about Looe. W. P.]

T. Q. Couch—"GRAINY. Proud; haughty."

Daniel—"Es larnin makes un *grainey*." *Thalia*, p. 15.

Halliwell—"GRAINEE. Proud; ill-tempered. *Devon*. 'Stiff; somewhat stately.' *Milles MS*."

104. "GREENSIDE" is used about Ashburton and Torquay.

Halliwell—"GREENSIDE. Grass; turf. *Devon*."

105. "GREYBIRD" is used about Ashburton and Torquay.

Pulman—"GREYBIRD. The thrush."

["GREYBIRD" is used about Looe. W. P.]

Parish—"GREYBIRD. The thrush."

Halliwell—"GREY-BIRD. The thrush. *Devon*."

Grose—"GREY-BIRD. A thrush. *South*."

106. "GRIDDLE" = Gridiron is used about Ashburton and Torquay.

Palmer—"GRIDDLE. Gridiron."

Pulman—"GURDLE (GRIDDLE). A gridiron. Welsh, *greidy*, a bake or backstone." "GURDLED (GRIDDLED). Cooked on the gridiron."

Williams—"GRIDDLE, or GIRDLE. A gridiron."

["GRIDDLE" = Gridiron is used about Looe. W. P.]

Burns—"Wi' jumping and thumping
 The vera girdle rang."—*Jolly Beggars*.

N. & Q.—"In Ogilvie's *Imperial Dictionary*, *griddle* is defined as a pan, broad and shallow, for baking cakes; and *gridiron* as a grated utensil for broiling flesh and fish over coals. . . . The *Manx and English Dictionary*, published by the Manx Society, 1866, [has] '*grainle*, a griddle to bake upon;' and in the English and Manx of the same dictionary is '*gridiron*, *grainle*.' . . . The *griddle*, a round flat plate of iron, is in daily use by the Manx housewife to bake her cakes or bread on, and never by any chance on a gridiron. . . . A somewhat similar word is used in Cumberland, *gurdle*, the iron on which cakes are baked." 4th S. iii. 505. "*A griddie* is . . . a flat circular plate of iron with a looped handle at

one side used throughout Ireland, Scotland, Wales, . . . to bake flat (*i.e.* unleavened) cakes on." *Ibid*, 602. "The *griddle*, often but corruptly pronounced *girdle*, is well known all over Scotland, where either oat-cakes, or 'souple scones the wale o' food,' form part of the diet. It is a round flat piece of malleable iron, placed over the fire, and upon which scones or oat-cakes are fried." 4th S. iv. 85.

Halliwell—"GREDEL. A gridiron.

'A strong fur he let make and gret,
And a *greidel* theropon sette.'—*MS. Coll. Trin. Oxon.* 57."

"GRIDDLE. A gridiron. *West.* Also to broil."

Grose—"GRIDDLE. A gridiron. *Exam.*"

[The transposition of the letter *r* and a vowel adjacent to it, as in *gurde* = griddle, quoted above from Pulman, is not without parallels in Devonshire, especially in the central, northern, and eastern districts. Thus, "To turn her *apern*" (= apron), *Palmer*, 10. "I wears th' *birches*" (= breeches), *Pulman*, 31. "My bess coat, hat, an *burches*" (= breeches), *Baird*, i. 6. "'Ooden *burges*" (= wooden bridges), *Pulman*, 45. "Gold and *curmson* clouds" (= crimson clouds), *Pulman*, 22. "*Cursmas* can'les" (= Christmas candles), *Pulman*, 63. "Th' *dursh* 'pon th' elem" (= the *thrush* upon the elm), *Pulman*, 23. "Veather'd *firnds*" (= feathered friends), *Pulman*, 4. "All my *furns*" (= all my friends), *Pulman*, 6. "Her took some *gerts*" (= she took some groats), *Palmer*, 53. "*Gurts* vor bliddy-pots" (= groats for blood or black puddings), *Rock*, 21. "A *girt* hinklin" (= a great inclination), *Baird*, i. 8. "*Gurt* house" (= great house), *Rock*, 16. "*Gurt* washamouth," *Lock*, 11. "*Gurt* whackin' ones" (= great large ones), *Pulman*, 5. "Laugh'd an' *gurn'd*" (= laughed and grinned), *Pulman*, 16. "*Hurd*-sparkid zide" (= red-spotted side), *Pulman*, 9. "Tha tails egid *urd*" (= the tails edged red), *Baird*, i. 27. "*Hurdy* light" (= ruddy light), *Pulman*, 23. "*Hurns* 'pon th' gravel" (= runs upon the gravel), *Pulman*, 5. "Widd'n *urn* into tha mait" (= wouldn't run into the flesh), *Baird*, i. 30. "*Urn* in man, *urn*!" (= run in man, run), *Rock*, 16. "*Hurshing* down" (= rushing down), *Pulman*, 45. "Th' *hurslin*' leaves" (= the rustling leaves), *Pulman*, 24. "Znip en *irt* auff!" (= snip it right off), *Baird*, i. 9. "*Purmroses* in every hedge" (= primroses in every hedge), *Pulman*, 4. "*Purty* an clivir" (= pretty and clever), *Baird*, i. 11. "*Purty* leetle heads," *Rock*, 36. "*Purty* fair," *Pulman*, 25. "Tha *urch* za wul as tha pore" (= the rich as well as the poor), *Baird*, i. 7. "How *urch* he ood be," *Pulman*, 46. "*Urch* Mugvurd" (= Rich, *i.e.* Richard, Mugford), *Baird*, i. 48. "*Urchy* tha bone-sheave" (= Richy

[has] the rheumatism), *Rock*, 5. "Vorehurner ev a brighten'd noon" (= forerunner of a brightened noon), *Pulman* 4.

The tendency to transposition illustrated above appears to be very prevalent in Somersetshire, as may be seen in Jennings; and is not quite unknown in Cornwall. *Gerts*, or *Girts*, or *Gurts* is used for *Groats* (i.e. hulled oats) about Looe; and Tregellas has *Gurt* for *Great*. W. P.]

107. "GRIZZLE," to laugh or grin, is used about Ashburton and Torquay.

Bowring—"GRIZZLE-DE-MUNDY. A laughing zany." *Trans. Devon. Assoc.*, 1866, p. 37.

Palmer—"GRIZZLED. Laughed."

Lock—"GRIZZLE. To grin or smile with a sort of sneer." "GRIZZLE-DE-MUNDY. A foolish creature that grins or laughs at every trifling incident."

Pulman—"GURZEL (GRIZZLE). To laugh foolishly."

Williams—"GRIZZLE. To laugh or grin."

["GRIZZLE," to laugh or grin, is used about Looe. W. P.]

Couch—"GRIZZLE. To Grin."

Daniel—"And grizzlin' weth es teeth."—*Thalia*, p. 33.

"Taggurs and gashly gristin' hapes."—*Batch*, p. 11.

Higham—"They oal begannd to loff and grizzle."—*Exhib.*, p. 70.

Tregellas—"How he grizzled and squinted."—*Tales*, p. 74.

Parish—"GRIZZLE. To fret; to grieve. 'I know the child aint well, because she's been grizzling about so all day, and she's never one to grizzle when she's well.'"

Halliwell—"GRIZZLE. To laugh or grin. *West.*" "GRIZZLE-DEMUNDY. A stupid fellow always grinning. *Devon.* 'That laughs at her own folly, which she mistakes for wit.' *Dean Milles M.S. Glossary*, penes me."

Grose—"GRIZZLE-DEMUNDY. A laughing fool; one that grins at everything. *Exm.*" "GRIZZLING. Laughing or smiling."

108. "GROSHY" is used about Ashburton, to denote complaining and groaning.

Spenser—"Both did at their second sister grutch And inly grieve."—*Faerie Queen*, b. ii. c. ii. a. 34.

Lydgate—"A mouth he has, but wordes hath he none;
Cannot complain, alas! for none outrage;
Nor grutcheth not, but lies here all alone,
Still as a lamb, most meek of his visage."

Canace, lines 29-32.

Gower—"He knew the names well of tho,
The which against him grutcheth so."

Tale of Coffers or Caskets, lines 47-8.

- Chaucer*— “Whoso *grutcheth* ought, he doth folly,
And rebel is to him that all may gie.”
Knight's Tale, lines 3047-8.
- “He 'gan to *grutch* and blamen it lite.”
Reeve's Prologue, line 3861.
- “By continual murmur or *grutching*.”
Wife of Bath's Prologue, line 5988.
- “What aileth you, to *grutchen* thus and groan?”
Ibid, line 6025.
- “This shall ye swear, that ye
Against my choice shall never *grutch* nor strive.”
Clerk's Tale, lines 8045-6.
- “As me best thinketh, do you laugh or smart,
And never ye to *grutchen*, night or day.”
Ibid, lines 8229-30.
- “After backbiting cometh *grutching* or murmurance.”
Parson's Tale, iii. p. 230.
- “That grievance suffered . . . without *grutching*, full patiently.”
Ibid, p. 248.
- “Not to be angry nor annoyed, nor *grutch* for he fasteth.”
Ibid, p. 293.

109, 110. “GRUTE” and “GRUTE-FIELD” are used about Ashburton and Torquay.

Palmer—“GRUTE. The earth from a mud wall. GRUTE, from the French *crotte*.”

Rock—“GRUTE. Earth; stock. ‘He’s of good *grute*.’”
“Their *grute*’s a holy thing.” p. 28. [=The earth into which they (Farmer and Dame Ford) have mouldered is a holy thing. W. P.]

Pulman—“GRUTE. Earth from a cob wall.”

[“GREET” is used about Looe, as a name for dry earth. W. P.]

Couch—“GREET. Earth; soil.”

Garland—“GRUTE. Dry earth.”

111. “GULGING” = drinking, is used about Ashburton.

Palmer—“GULGING. Drinking.”

Couch—“GULGE. To drink gluttonously.”

Garland—“GULGE. To drink greedily.”

112. *Perry*—“GULCH. A swallowing; a glutton.”

“GULK” is used about Ashburton and Torquay.

Bowring—“Take as specimens of [Devonshire. W. P.] mispronunciation . . . *gulk*, . . . and who would discern in them . . . *gulp*?” *Trans. Devon. Assoc.*, 1866, p. 36. [Is it certain that *gulk* is a mispronunciation of *gulp*? Why may

it not be the word *gulch* with the power of *k* given to the terminal *ch*? W. P.]

Palmer—"GULK. To swallow."

Jennings—"GULCH. To swallow greedily; a sudden swallowing."

["GULK" is used about Looe. W. P.]

Halliwel—"GULK. To gulp, or swallow. *Devon*."

113. "GURRY-BUTT" is used about Ashburton and Torquay.

Rock—"GURRY-BUTT. A dung cart."

Moore—"GURRY-BUTT. A dung sledge."

114. *Rock*—"HACK. To dig." "A beat'th mun all vor *hack* an' hail." p. 13.

Marshall, 1—"HACK. Half a mattock; a mattock without the axe-end; a tool much in use." *Eng. Dial. Soc.* B. 2.

Harland—"HACK. A mattock." *Ibid.* C. 1.

Willan—"HACK. An agricultural instrument consisting of a flattened and bent piece of iron, perforated so as to receive through its centre of gravity a strong wooden handle. The iron terminates at one end in an obtuse point, at the other in a small curved axe or hoe." *Ibid.* B. 7.

Ray, N.—"HACK. A pick-ax; a mattock made only with one end and that a broad end." *Ibid.* B. 15.

Halliwel—"HACK. A strong pick-axe, or hoe; a mattock; a spade." *Var. dial.*

115 and 116. *Perry*. "HAMES. The wood in a horse's collar."

"HAMES" is used about Ashburton and Torquay.

Rock—"HAIMSES. Part of a horse collar."

Couch—"HAME. A circle of straw rope; a straw horse-collar. A *hame* is used to fasten the fore leg of a sheep to his neck, in a somewhat unmerciful way, to prevent him from breaking fence."

Parish—"HAMWOOD [HAME-WOOD]. Pieces of wood on the collar of a horse to which the traces are fixed."

Halliwel—"HAM-TREES. The *hames*, q. v. *Devon*." "HAMES. Pieces of wood on the collar of a horse to which the traces are fixed. *Var. dial.*" "HAMWOOD. A hoop fixed round the collar of a cart-horse to which the chains are attached. *South*."

117. "HAND-BEATING" is used about Ashburton and Torquay.

Lock—"Whare they be shoolding o' beat, *hand-beating*, or angle-bowing." p. 14.

Vancouver—"The common gardener's spade, with a short handle, is scarcely anywhere seen among the farmers in North Devon; the holeing, digging, gripping, ditching, hack-ing, and *hand-beating*, being entirely performed with a broad-bitted mattock, which is so fastened upon the shaft, as to incline inwards little short of an angle of 45° with the line of its handle." pp. 125-6.

118. "HAND-REAPING" is used about Ashburton and Torquay.

119. *Walker*—"HATCH. The half-door."

Perry—"HATCH. A half-door."

"HATCH" is used about Ashburton and Torquay.

Palmer—"HATCH. Half-door of a cottage."

Rock—"HATCH. A breast-high door." "Giles tha *hatch* as well may hapse." p. 6. [Giles may as well hasp the hatch. W. P.]

Pulman—"HATCH (A.S. *Hæca*). A wicket, or half-door. The various local names of *Hatch*—such as *Hatch-Beauchamp*—no doubt mark the ancient sites of gates to parks or forests."

Barnes—"HATCH (A.S. *Hæca*). A wicket, or little gate."

["Hatch" is used about Looe. W. P.]

Bannister—"HATCH. A forest gate; or flood-gate; or half-gate (Modern Cornish)."

Parish—"HATCH. A gate; a half-door."

Ray, N.—"HECK. The door. '*Steck the heck*' [shut the door]. Hence HATCH." *Eng. Dial. Soc.* B. 15.

N. & Q.—[C. T., speaking, W. P.] of "*the hamlet of Ham and Hatch*, half-way between Richmond and Kingston, Surrey," [says] "Ham is a large straggling village, with many mansions and smaller houses built round Ham Common. Entering the Common from the south . . . side, by a turn-pike-road, you pass through a gate. This is a *common*, not a *turnpike-gate*. A house adjoins the gate, and cut upon a stone above the door are the words, '*Errected by the inhabitants of Ham and Hatch*.' . . . I . . . asked the old woman who lives in this house, and who attends to the gate, where *Hatch* was, when she replied that her house was *Hatch*; and on my repeating the question in another form, she said, "*I am the Hatch to the hamlet of Ham*.'" 2nd S. x. 316.

Halliwell—"HATCH. A wicket, or half-door. *Var. dial.* To leap the *hatch*, to run away."

Grose—"HECK. A half-door. *North*."

Shakspeare—"Either get thee from the door, or sit down at the *hatch*."—*Com. Err.*, S. iii. 1.

"In at the window, or else o'er the *hatch*."—*K. John*, i. 1.

"That hand, which had the strength, even at your door,
To cudgel you, and make you take the *hatch*."—*Ibid*, v. 2.

"Dogs leap the *hatch*."—*K. Lear*, iii. 6.

Percy—"All the wyves of Tottenham came to se that syzt
With wyspes, and kexis, and ryschys there lyzt,
To fetch hom ther husbundes, that were tham trouth plyzt;
And sum brozt gret harwoe,
Ther husbundes hom to fetch,
Sum on dore, and sum on *hech*,
Sum on hyrdyllys, and sum on crech,
And sum on whele-barrowa."

Tournament of Tottenham, vol. ii. pp. 18-19, lines 200-207.

["He'll have to ride the *hatch*," is a familiar phrase about Looe, and signifies, "He'll be brought to trial." It is generally used jocosely in the case of any loud professor of religion who has been "overtaken in a fault;" and the idea is that his trial will be the ordeal of attempting to ride or sit on the top or narrow edge of a *hatch*, or half-door, when, if he maintain his seat, he will be pronounced innocent; if he fall, he is guilty. If he fall inwards (*i.e.* within the room or building), he will be pardoned; but if he fall outwards, he will be excommunicated. W. P.]

120. Halliwell—"HAUL-TO. A three-pronged dung-fork."

[This tool seems to be well known in both South and North Devon. It is known as a *Tichcrook* about Ashburton and Torquay, and the same name appears to be used about Barnstaple, as Mr. Rock, in an enumeration of agricultural tools, has "A two-bill, *tichcrook*, an' tormentor." p. 21. At both Ashburton and Torquay it is also called a *Scum*, a name which will be acknowledged as appropriate by every native of East Cornwall, where to *scum* is to *scratch*. This tool is occasionally called a *Drawing-Evil* about Torquay. (See EVIL.) W. P.]

121, 122, 124. Bray. "HELLIER. Slater." "HELLING. Roof." ii. 289.

"HELLIER," "HELLING," &c., are used about Ashburton and Torquay.

Palmer—"HEALED. Covered."

Rock—"HAIL. To cover."

Pulman—"HELLIER. A tiler."

Moore—"HEAL, or HELL. To cover with slates." "HELLIER. A slater."

Jennings—"HELLIER. A person who lays on the tiles of a roof; a tiler. A Devonshire word."

Williams—"HEEL. To hide, to cover (A.S. *helan*). "HEELER. One who hides or covers. Proverb: 'The *heeler* is as bad as the stealer.'"

Barnes—"HEAL (A.S. *helan*). To cover. 'To *hēal* beāns.' To earth up beans. 'The house is *unhealed*.' The house is stripped as by a rough wind. 'Nis nan thing *overheled*, the ne beo *unheled*. *Luke* xii. 2. 'And if house be *unheled*' *Piers Plowman*."

[About Looe, to cover a house with a *slate* roof is to HEAL (pronounced *hail*) it; those who perform the work are HELLIER (I have never heard the term applied to *tilers* or *thatchers*); the slates forming the roof are the HELLING; a slate suitable for the purpose is a HELLING-STONE; putting the slates on the roof is HEALING (pronounced *hailing*; and when the work is completed the house is HEALED (pronounced *hailed*). To HEAL, however, is to cover anything—thus a nurse HEALS her charge with the bed-clothes—and to uncover is to UNHEAL. The Somersetshire proverb, mentioned above, is well known about Looe, but is rendered "The *hailer's* as bad as the stailer." W. P.]

Couch—"HELLING. Roofing (*Helling* stone).

'His howse were *unhildid*
And ful i yvel dight.'

Chaucer; Coker's Tale of Gamelyn."

Parish—"HEAL. [*Hēlan*, Ang. Sax., to cover or conceal.] To cover. 'I healed up the roots with some straw.' 'In the ancient English dialect the word *hell* was taken in a large sense for the general receptacle of all souls whatsoever, and it is so used in the old translation of the Psalms in our Common Prayer Book (Ps. lxxxix. 47), which sense may be confirmed from the primary and original signification of the word; according to which it imports no more than an invisible and hidden place, being derived from the old Saxon word *hīl*, which signifies to hide, or from the participle thereof, *helled*, that is to say, hidden or covered; as in the western parts of England, at this very day, to *hēle* over anything, signifies, amongst the common people, to cover it, and he that covereth an house with tile or slate is called an *hellier*; whence it appears that the word *hell*, according to its primitive notion, exactly answers to the Greek *hades*, which signifies the common mansion of departed souls, and

was so called because it is an unseen place.—*Lord Chancellor King on the Apostles' Creed*, pp. 233, 193, 194. Ed. Lond. 1702." "HEALING. A coverlet; a counterpane. In the will of Rev. H. Marshall, he leaves '2 pillowberes and a *healing*.'" "HILL-UP. [*Helan*, Ang. Sax., to cover.] To hill-up hops is to raise small hills or heaps over the roots for the purpose of keeping them dry in the winter."

Ray, S. & E.—"HEAL. To cover; *Suss.* As 'to heal the fire,' 'to *heal* a house,' 'to heal a person in bed;' i.e. to cover them; ab. A.S. *hēlan*, to hide, cover, or *heal*. Hence in the *West*, he that covers a house with slates is called a *Healer*, or *Hellier*." *Eng. Dial. Soc.* B. 16.

Ray, N.—"HEAL. To cover. Welsh *hilio*, to cover. Perhaps we [the Welsh] have received it from the English, which may be the reason Dr. Davies hath omitted it in his *Lexicon*. It is a word generally used in *North Wales*.—*Lloyd's Catalogue*." "HILL. To cover. General.—*Ray's Pref.*, p. 4, 1-21."

N. & Q.—"I may mention another Devonianism. The cover of a book is called its *healing*." 1st S. viii. 44.

Hallivell—"HEALER. A slater or tiler. *West*. "HEALINGS. The bed clothes. *Oxon*. It occurs in *MS. Gough*, 46." "HELE. To hide; to cover. (A.S.) Hence, in Devon, to roof or slate, to earth up potatoes, to cover anything up. 'Onder the schadow of thi wynges *hele* me fra the face of the wicked that me has tormentid.' *MS. Coll. Eton*, 10, f. 24." "HELELESS. Helpless. *Chaucer*." "HELING. Hidden. *MS. Cott. Vesp. D. vii*." "HELINGS. The eyelids. *Palsgrave*." "HELLIER. A thatcher, or tiler. *West*. Wat Tyler is called *Walterus Helier* by Walsingham. See *MS. Lansd.* 1033." "HILE. To cover over. (A.S.) See *Depos. Ric. II.* p. 25; *Ord. and Reg.* p. 471; *Langtoft*, p. 224; *Ywaine and Gawin*, 741. Still in use, applied to plants.

'Thei *hiled* hem, I telle hit the
With leves of a fige tre.'

Cursor Mundi, *MS. Coll. Trin. Cantab.* f. 5.

'When thaire horses were *hilled*,
They prikkede fast thorow the felde,
Bathe with spere and with schelde.'

MS. Lincoln, A. i. 17, f. 134"

"HILING. A covering. It occurs in *MS. Cott. Vespas. D. vii. Ps. 35*. See *Chester's Plays*, i. 29; *Florio*, p. 122. Now spelt *hilling*. Left unexplained by *Ritson*, iii. 180, coverlets."

Grose—"HEAL. To cover. *Berksh.*"

Prince—"West Ogwell house . . . was timbred and heal'd." p. 694.

Spenser—"Next did Sir Triamond unto their sight
The face of his dear Canace *unhale*."

Faerie Queen, b. iv. c. v. s. 10.

"By her the heaven is in his course contained,
And all the world in state unmoved stands,
As their Almighty Maker first ordained,
And bound them with inviolable bands;
Else would the waters overflow the lands,
And fire devour the air and *hell* them quite,
But that she holds them with her blessed hands."

Ibid, b. iv. c. x. s. 35.

"Now the frosty Night
Her mantle black through heaven 'gan *overhale*."

Shepherd's Calender—January, lines 75-8.

Chaucer—"And some saiden, that great delight have we
For to be holden stable and eke secré,
And in one purpose steadfastly to dwell,
And not bewrayen thing that men us tell.
But that tale is not worth a rake-stele.
Pardie, we women cannen nothing *hale*."

Wife of Bath's Tale, lines 6527-32.

"Ye have full often assayed my great silence and my great
patience, and eke how well that I can hide and *hale* things,
that men ought secretly to hide." *Tale of Melibæus*, iii. p. 22.

"Murder is so wlatson and abominable
To God, that is so just and reasonable,
That He will not suffer it *hyllid* be :
Though it abide a year, or two, or three,
Murder will out, this is my conclusioun."

Nun Priest's Tale, lines 15,059-63.

123. *Wolcot*—"Making one's hair stand up like queels
Upon a *hadgyboar*.—*Mid. Elect*.

Rock—"HEDGE-BOAR. Hedge-hog."

"Rabbin Knapp
'Sa bibbling, boosting, brinded chap,
A dinderhead *hadgy-boar*." p. 24.

Williams—"HEDGE-BORE. A rough workman."

["HEDGYBOAR" is used about Looe. W. P.]

Couch—"HEDGYBOAR. Hedge-hog."

Tregellas—"HEDGABOORS. Hedge-hogs." "Live 'pon *hedgy-boors* and that sort of mait." *Tales*, p. 67.

[About Ashburton and Torquay *Vuz-pig* is the equivalent of *Hedgeboar*.]

125. "HERBARY" is used about Ashburton and Torquay.

Halliwel—"HERBERY. A cottage garden; a herb garden.
Devon."

Spenser—"Deck'd with flowers and *herbars* daintily."

Faerie Queen, b. ii. c. ix. s. 46.

126. (See YOWING, also in Mr. Marshall's list.)

Halliwel—"HEWING. A method of cutting wheat with one hand. *Devon*."

127. *Bray*—"We have likewise the *heck-mall*, a busy bird, and fond of making himself comfortable." i. 319.

"HECKMAL" is used about Ashburton; and "HICKYMAL," or "HECKYMAL," about Torquay.

Bouring—The *Heckemal*. *Trans. Devon. Assoc.*, 1866, p. 18.

Rock—"ACKMAL. Nuthatch." "I zeed the *ackmals* there." p. 4.

Williams—"HAGMAL. A slattern; a titmouse."

["HEKKYMAL" is used about Looe as a name for the blue tit, and also as a name of contempt for a child whose conduct or appearance is unsatisfactory. W. P.]

T. Q. Couch—"HEKKYMAL, The blue tit (*Parvus cæruleus*)."

Henwood—"A bra' size *heckmal*." *Conference*, p. 28.

Halliwel—"HACKMAL and HECKEMAL. A tomtit. *Devon*."

128. "HINE" is used about Ashburton, and "HIND" about Torquay.

Pulman—"HINE. A hind; a farm bailiff; a servant immediately behind the master."

Vancouver—"The *hind* or bailiff of the estate." p. 85.

["HIND" and "HINE" are used about Looe, where a proverb states that "*Hines* grow well in every soil" = The *hind* certainly prospers. W. P.]

Marshall, 1—"HIND. A farm bailiff, or head man." *Eng. Dial. Soc.*, B. 1.

Halliwel—"HIND. A servant or bailiff in husbandry. *North*."

129. *Pulman*—"A yearling colt is called a HOG-COLT."

Halliwel—"HOG-COLT. A yearling colt. *Devon*."

Grose—"HOGGETS. Hog-Colts; colts of a year old. *Hampsh*."

130. *Walker*—"HOGGEREL. A two years old ewe."

Perry—"HOG. A castrated sheep of a year old. A bullock of a year."

"HOG" is used about Ashburton and Torquay.

Pulman—"HOG. A male sheep one year old."

Vancouver—"The ewes and lambs, with the preceding year's hog sheep, are brought down from the forests in the beginning of November." p. 346.

Jennings, Barnes—"HOG. A sheep one year old."

Williams—"HOG, HOGGET. A sheep or horse one year old."

["HOG" is used about Looe. W. P.]

Parish—"HOGGET. A young sheep, just more than a year old."

Ray, S. E.—"HOGS. Young sheep; *Northamptonshire*. Used also in the same sense in *Yorksh.*" *Eng. Dial. Soc.* B. 16.

Marshall, 4—"HOGS, LAMB-HOGS. Yearling sheep, before *Shearday*." *Ibid.* B. 5.

Marshall, 1—"HOG. A sheep of a year old; a *hoggard*." *Ibid.* B. 2.

Hutton—"HOG. A sheep of a year old." *Ibid.* B. 1.

Ray, N.—"HOGG. A sheep of a year old; used also in *Northampton* and *Leicester* shires, where they also call it a *hoggel*." *Ibid.* B. 15.

Halliwel—"HOG. A term for a sheep from six months old till being shorn. Some say from a lamb; others, a sheep of a year old. The last meaning is the one intended by early writers."

Grose—"HOG. A sheep of a year old. *North.* Sometimes called *hoggel*."

131. *Perry*—"HOLME. The evergreen oak; the ilex."

"HOLM" is used about *Ashburton* and *Torquay*.

Rock—"HOLM. 'Holly (*gy.* if local)."

Pulman—"HOLM. The holly."

Jennings—"HOLMEN. Made of holm."

Williams—"HOLMEN. Made of *holm* or holly; as HOLMEN CLAVEL, a holly mantle-piece."

Barnes—"HOLM, HÔM. Holly, or the more prickly holly in distinction from the smoother leaved."

["HOLM" is used about Looe. W. P.]

Couch—"HOLM. The holly."

Bannister—"HOLM BUSH = HOME BUSH. Holly Bush."

Carew—"Pickaxes of *Holme*, *Boxe*, and *Hartshorne*." p. 8.

Marshall, 1—"HOLLIN. Holly." *Eng. Dial. Soc.* B. 2.

Halliwel—"HOLM. The holly. Some apply the term to the evergreen oak, but this is an error."

Spenser—"Much can they praise the trees, so straight and high,
The sailing pine; the cedar proud and tall;
The vine-prop elm; the poplar never dry;
The builder oak, sole king of forests all;

The aspen good for staves ; the cypress funeral ;
 The laurel, meed of mighty conquerors
 And poets sage ; the fir that weepeth still ;
 The willow, worn of forlorn paramours ;
 The yew, obedient to the bender's will ;
 The birch for shafts ; the sallow for the mill ;
 The myrrh sweete-bleeding in the bitter wound ;
 The warlike beech ; the ash for nothing ill ;
 The fruitful olive ; and the platane round ;
 The carver *holm* ; the maple, seldom inward sound."
Færie Queen, b. i. c. i. st. 8, 9.

132. "HOME-SCREECH" is used about Ashburton and Torquay.

Pulman—"HOLM-SCREECH. The mistle-thrush."

Jennings—"HOMESCREECH. A bird which builds chiefly in apple-trees. I believe it is the *Turdus viscivorus*, or missel.

Williams—"HOLME-SCREECH. The mistel-thrush, from its eating the berries of the holly or *holm* tree."

["HOLM-SCRITCH" is used about Looe. W. P.]

Couch—"HOLM-SCRITCH. The missel thrush."

Halliwell—"HOLM-SCREECH. The missel-thrush. *West*."

133. "HOOD," or "OOD," is used about Ashburton and Torquay.

Baird—"Stid uv *hood* ha brort hum 'vuz" i. 66.

Rock—"HOOD. Wood."

Jennings—"In Compton 'ood." p. 129.

["HOOD," or "OOD," is used about Looe. W. P.]

Garland—"HOOD. Wood ; forest."

Tregellas—"HOOD. Wood ; forest." "Going through a hood." *Tales*, p. 69.

Halliwell—"HOOD. Wood. *Somerset*."

134. "HOODWALL" = Woodpecker, is used about Ashburton and Torquay.

Williams—"WOODWALL. Woodpecker."

Percy—"The *woodweele* sang and would not cease." *Robin Hood and Guy of Gisborne*, i. 66.

[The author of the ballad of *Robin Hood and Guy of Gisborne* could scarcely have been speaking of the woodpecker under the name of *woodweele*, unless his politeness led him so far as to call the discordant notes of the woodpecker by the name of *singing*. Mr. Gilfillan has the following remark on this word in his Glossary to Percy (vol. i. p. 290):—"Woodweele, or wodevale, the golden ouzle, a bird of the thrush kind. The original MS. has here *woodweeta*." W. P.]

135. *Bray*—"The *hoop* is a bird . . . who makes more noise than he does work." i. 320.

"HOOP" is used about Ashburton, not, my informant states, as a name for the bullfinch, but for "a little bird like a snipe, found in meadows in evenings."

"HOOP" is used about Torquay as a name for the bullfinch.

Bouring—"HOOP." *Trans. Devon. Assoc.*, 1866, p. 18.

Rock—"HOOP. The bullfinch." "A copperfinch an' *hoop's* nest." p. 35.

Pulman—"HOOP. The bullfinch."

Moore, Cooke, Jennings—"HOOP. A bullfinch."

Williams—"HOOP. Bullfinch. COCK-HOOP, HEN-HOOP."

["HOOP" is used about Looe as a name for the bullfinch. W. P.]

Couch—"HOOP. The bullfinch. Is this a corruption of the Saxon name of the bird, *alpe*?

'In many places nightingales

And *alpes* and finches and wodewales'

Romant of the Ross."

Halliwell—"HOOP. A bullfinch. *Somerset.*"

Grose—"ALPE, NOLPE, or BLOOD OLP. A bullfinch. *Norf. and Suff.*"

136. "HOOST" is used about Ashburton and, in the case of cattle only, about Torquay.

Baird—"I thort I shude raily a laff'd mezul *hoos.*" i. 44.

"Ha kauff'd auff tha *hoce.*" i. 49.

Lock—"HOAZED. Hoarse."

Barnes—"The *huosse* gookoo da zing."—*I got two Viels.*

["HOOST" and "HOZE" are used about Looe. W. P.]

Daniel—"Her's a titch'd apun the breth,
An' *hoas'd* a little mite."—*Motley*, p. 36.

Garland—"HOSE. Hoarseness."

Sandys—"HOOZY. Having a hoarseness or cough." "HOOST, HOOSE. A cough. Ang. Sax., *hwosta.*" "Hoz (Cornish). Hoarse."

Tregellas—"Cry 'tel we be *hoa'se.*" *Tales*, p. 56.

Thoresby—"HOOAST, HOST. A cough; Ang. Sax. *hwosta.*"

"HOOYZE. A half cough, proper to cattle." *Eng. Dial. Soc.* B. 17.

Ray, N.—"HOSTE. To cough; from [rather related to] the Low Dutch word *hoesten*, to cough, and *hoest*, a cough; ab. A.S. *hwóstan*, tussire, to cough." *Eng. Dial. Soc.* B. 15.

Burns—"Now colic grips an' barkin' *hoast*,
May kill us a'."—*Scotch Drink*, st. 19.

Halliwell—"HOAST. A cough. Also hoarse. *North*."
 "HOAZED. Hoarse. *Exmoor*."

Grose—"HOASED. Hoarse. *West*."

140. *Walker*—"JOLTHEAD. A great head; a dolt; a block-head."

Perry—"JOLTHEAD. A blockhead; dunce."

Palmer—"JOLTER-HEAD. Block-head."

Halliwell—"JOLTER-HEAD. A stupid fellow. *South*. Properly, thickheaded. *Cotgrave*."

Shakespeare—"Fie on thee, jolt-head! thou canst not read."

Two Gen. of Ver. iii. 1.

"You heedless joltheads, and unmanner'd slaves"

Tam. Shrew, iv. 1.

141. *Walker*—"JUNKET. A sweet-meat; a stolen entertainment. To feast secretly; to make entertainment by stealth; to feast."

Perry—"JUNKET. A private entertainment. To feast; to feast secretly."

"JUNKET" = A Devonshire delicacy, composed of milk and rennet, flavoured with wine or brandy, &c., is used about Ashburton and Torquay.

Bowring—"Milton, Spenser, and Shakespeare, South and Swift, have made our Devonshire word *junket* classical; and, what is still more remarkable, the word is used in old English translations from Virgil, Pliny, and Plutarch. I doubt its commonly-accepted derivation from the Italian *giuncata*, which, like the French *jonchée*, means curds pressed between rushes (*joncs*), like our Bath cheese.

'You know there wants no *junkets* at the feast.'

Taming of the Shrew, iii. 2

'And bear with you both wine and *juncates* fit.'—*Faerie Queen*, ii. 4

'The savoury *junkets* tasted with delight.'—*Drayton*.

'How faery Mab the *junkets* eat.'—*L'Allegro*."

Trans. Devon. Assoc., 1866, pp. 28-9.

Palmer—"JUNKETING. Private entertainment."

Rock—"JUNKET. A preparation of milk and rennet.

'Wi' a drap o' runnet

I jist a *junket* made.' p. 5."

Whyte-Melville—"You would have seen a score of neighbours, men and women, to tell you the news, and wind up the night with a *junket*, or may be a dance." p. 14

Pulman—"JUNKET. A well-known Devonshire delicacy, prepared from milk."

Moore—"JUNKET. Coagulated milk or curds, eaten with sugar, spices, and clowted cream."

Williams—"JUNKET. Curds and cream, with spices and sugar, &c.; from Ital. *giuncata*, cased in rushes; from *giunco*, a rush; a name given in Italy to a kind of cream cheese."

["JUNKET" is used about Looe in the same sense as at Ashburton and Torquay. W. P.]

Halliwel—"JUNKET. A sweetmeat; a dainty. See *Hollybande's Dictionarie*, 1593, in v. *Dragée*. In Devonshire the term is still used, but restricted to curds and clowted cream. A feast, or merrymaking. Also to gad about, to gossip. *North*. 'Junket or banket.' *Palgrave*."

Grose—"JUNK. A singular or favourite dish. *Glouc*."

142. *Moore*—"KEEZER. A sort of sieve."

Halliwel—"KEEZER. A sieve. *Devon*."

143. "KICK" and "KICKHAMMER" are used about Ashburton and Torquay.

Bowring—"KICKHAMMER. A stammerer." *Trans. Devon. Assoc.*, 1866, p. 37.

Palmer—"KICKETH. Stammers."

Lock—"KICKHAMMER. A stammerer."

Pulman—"KECKER, or KECKER-HORN. The windpipe. KECK-HAMMER. To stammer, or, from some other than natural impediment, to hesitate in speech. 'What's bide *keckham-maring* there vor?'"

Jennings—"KECKER. The windpipe; the trachea."

Williams—"KECKER, KYECKER-PIPE, KYECKER, KYECK-HORN. The wind-pipe; a pervious horn; from *kike*, to look through."

Barnes—"KIAKEHARN. The windpipe, particularly of a slaughtered animal."

Halliwel—"KICK. To stammer. *Devonshire Dial.* p. 72."

"KICKHAMMER. A stammerer. *Devon*."

Grose—"KICKHAMMER. A stammerer. *Devon*."

144. "KIT" is used about Ashburton and Torquay.

["KIT" is used about Looe, where there were some nursery rhymes containing the line, "The *kit*'s asleep, the crow's awake." All the other lines have escaped me. W. P.]

Couch—"KIT. The buzzard, *Buteo vulgaris*. Perhaps applied to the kite, *Milvus regalis*, before it was so exceedingly rare."

145. *Marshall*, 1.—“**LEAD**. To carry, as corn and hay.”
Eng. Dial. Soc. B. 2.

Hallivell—“**LEAD**. To cart corn. *Var. dial.* Also to carry trusses on horseback. ‘Cartyne, or *lede* wythe a carte.’ *Pr. Parv.*”

Grose—“**LEAD**. To lead; to carry in carts, &c., as corn and hay. *North.*”

146. “**LEARY**” is used about Ashburton and Torquay.

Lake—“**LEARY**. Empty; hungry.”

Palmer—“**LARY**. Empty, or unladen.”

Rock—“**LEARY**. Empty.” “Jist now es veelt unkummon *leary.*” p. 8.

Lock—“**LARY, LEARY, LEER**. Empty; thin.”

Pulman—“**LEER, LEERY** (German, *Leer*). Sinking in the stomach; almost faint from hunger. This is a very expressive word, meaning something more than hunger, and what the word hunger does not convey.”

Jennings—“**LEER**. Empty.”

Barnes—“**LEER, or LEERY**. German, *Leer*. Empty in the stomach; wanting food.”

[“**LEARY-HANDED**” is used about Looe. W. P.]

Sandys—“**LEARY**. Empty.”

Parish—“**LEAR**. Thin; hungry; faint.”

Hallivell—“**LEAR**. Hollow; empty. The *lear* ribs, the hollow under the ribs. *Var. dial.*”

Grose—“**LEARY**. Empty. *Dorsetsh.*”

147. *Bray*—“**LEET** is used in Devonshire to signify a stream of water.” i. 232. Note.

“**LEEK**” is used about Ashburton, and “**LEET**” about Torquay, to signify a stream of water.”

Pulman—“**LEART**. A water-course.”

Moore—“**LEAT**. An artificial rill or rivulet.”

Vancouver—“The entrance for the *leat* was cut at about thirty feet above the lip of the weir.” p. 319.

Jennings—“**LEAT**. To leak; a leak; a place where water is occasionally let out.”

Barnes—“**LEAT** (A.S. *Leotan*). To leak; to let out liquid.”

[“**LEET**” is used about Looe, but chiefly in the compound word “**MILL-LEET**.” W. P.]

Cooke—“**LEAT**. A water-course.”

Hallivell—“**LEAT**. To leak; to pour. *Dorset*. An artificial brook. *Devon*. Properly one to convey water to or from a mill.”

Prince—"When the Chamber of Exeter, A.D. 1675, undertook . . . to cut a new *leat* between that key and Topsham."

148. "LENT-ROSE" is used about Ashburton and Torquay.
Halliwell—"LENT-ROSE. The daffodil. *Devon*. It is also called the *Lent-lily*."

[The daffodil or Narcissus is called a *Lent-lily* about Looe, and also in various parts of Devon and Somerset shires. See Bowring, Pulman, and Williams; also Couch for East Cornwall. W. P.]

149. "LERRAPIN" is used about Ashburton and Torquay.

Palmer—"LEREPING. Trailing."

Williams—"LIRRIPI. Slouching."

["LERRAPING" is used about Looe. W. P.]

Couch—"LERRIPPING. Expressive of large size; and also of severe chastisement. It is equivalent to the slang term *whopping*."

Forfar—"Leven' of hes *lerrapen* wife to go 'bout weth no shoes to her feet." *Exhib.* p. 87.

Halliwell—"LEREP. To trail slovenly. *South*. Also to limp or walk lamely."

150. "LERRIP" is used about Ashburton and Torquay.

Wolcot—"Iss, iss, I'd make the Madams squall,
I'd *lerrick* mun."—*Mid. Elect.*

Palmer—"LERRICK. Chastise."

Rock—"LERRUPING. A flogging."

Jennings—"LIRROP. To beat. This is said to be a corruption of the sea term, lee-rope."

["LERRUPPING" is used about Looe. W. P.]

Couch—"LERRIPPING. Expressive of large size; and also of severe chastisement. It is equivalent to the slang term *whopping*."

Daniel—"Ef the hoss shud ren an' skat
The sharps to *lirrup*."—*Companion*, p. 24.

Garland—"LERRUP. To beat. 'I'll give thee such a *lerruping*.' Mr. Couch says *lerripping* signifies unusual size, and curiously enough, he illustrates the sense by the slang term *whopping*, which is also used in the sense of a beating."

Halliwell—"LERRICK. To beat; to chastise. *Devon*."

151. "LEW" and "LEWTH" are used about Torquay.

Palmer—"No going to the *lew* zide, you know." p. 30.

Rock—"LEW. The lee."

Pulman—"LEW (A.S. *hleow*). Sheltered." "LEWTH. Warmth; shelter."

Moore, Cooke—"LEW. Sheltered; defended from storms."

Jennings—"LEW. Sheltered; defended from storms or wind." "LEW, LEWTH. Shelter; defence from storm or wind."

Williams—"LEW, LEWTH, LEWTHY. Shelter; sheltered; leeseide."

Barnes—"LEW (A.S. *hleow* or *hleo*). Sheltered. 'In the *lew* zide o' the hedge.' 'On thisses holtes *hleo*,' within this grove's shelter. LEWTH. Shelter from the wind."

["LEW" and "LEWTH" are used about Looe. W. P.]

Couch—"LEW. Sheltered. LEWTH also is used as signifying shelter. I will only suggest this as one of the many explanations of the name of Looe."

Garland—"LEWTH. A sheltered place; in the lee."

Gervis—"We're shut in fine and *loo*."—*Ballads*, p. 36.

"Now, git into the *looth*."—*Ibid*, p. 37.

Tregellas—"Go round to the *lew* (sheltered) door."—*Peeps*, p. 77.

Bannister—"LEWCOMBE. Sheltered (*hleo*, Saxon) vale, Teutonic." "LEWCOTT. Old (*coth*) place (*le*). Murray. Sheltered cot or wood. Teutonic." "LOOE = LOE = LO. A lake, a pool, a pond, or inlet of water. (Rev. Robert Williams.) Scawen renders LOOE and LOE, a low or watery place. M'Lauchlan prefers referring both LOOE and LOE to the tumuli near (*low*, a mound, tumulus, Saxon), rather than to *llwch*, a lake or pool, Welsh; in Cornish, *lo*."

Parish—"LEW [*Hleowth*, Ang. Sax. warmth]. Sheltered from the wind. 'My garden is nice and *lew*.' "LEWTH. Shelter. 'You won't find but very little *lewth* on the hill.'"

Ray, S. E.—"LEE, or LEW. Calm; under the wind." *Eng. Dial. Soc.* B. 16.

Willan—"LEW. Mild, calm." "LEW-WARM. Lukewarm." *Eng. Dial. Soc.* B. 7.

N. & Q.—"Grose, in his *Provincial Glossary*, says, 'lee, or *lew*, calm, under the wind, shelter, in use in the south of England." 4th S. xii. 256. "LEWTH," [says Mr. T. W. Webb. W. P.] "will be found under the form *looth* in Lewis's *Herefordshire Glossary*, to which I contributed it, having heard it used by a woman in describing the warm situation in which she had placed a dying infant." *Ibid*, 294. "In Scotland this word [LIEU] is now in common use, although, according to the pronunciation there, its orthography should be rather *lew* or *loo*. Tepid water is said to be *loo* or *lew*,

which is nearly synonymous with *lukewarm*. *Loo* water, mixed with a little milk, is a favourite lotion for wound or sore. A beast, say a horse, so heated as that the sweat is visibly breaking forth, is said to be *loo*, or *loood* (*leaved*). Cattle, again, having taken to the sheltered side of a fence, or plantation, are said to be '*in the lee*,' or on the *lee*, or *lown*, side of it, because they are on that side which is out of, or not exposed to, the wind. It is, therefore, also the *lown* (*i.e.* the calm) side. A '*lown blink*' is a common expression. The expression '*warm soil*' is to be heard every day. It seems altogether synonymous with '*lieu soil*' = that which is warm, genial, and therefore productive." 4th S. xii. 336-7.

Halliwel—"LEW. To get into the *lew*; *i.e.* into a place sheltered from the wind. *Var. Dial.* 'Soule grove sil *lew*' is an ancient Wiltshire proverb; *i.e.* February is seldom warm. Lukewarm. Still in use. *Lewe-water*, *Ord. and Reg.* p. 471." "LEWTH. Warmth; shelter. *West.*" "LOO, LOOTH. Under the *loo*, the leeward. To *loo*, to shelter from the wind. *Kent.*"

152. "LINHAY," or "LINNY," is used about Ashburton and Torquay.

Bowring—"LINHAY." *Trans. Devon. Assoc.*, 1866, p. 15.

Palmer—"LINNEY. A shed attached to another building."

Rock—"LINHAY. . A shed for cattle."

Pulman—"LINNEY. An open shed on a farm."

Moore—"LINHAY. An open shed."

Vancouver—"Garden-walls, farm-houses, barns, stables, *linneys*, village fences, and cottages are all built with this dull, heavy, and deforming material." p. 92.

Jennings—"LINNY. An open shed, attached to barns, out-houses, &c."

Williams—"LINNEY, LINHAY. An open shed."

["LINNY" is used about Looe. W. P.]

Couch—"LINHAY. A lean-to roof supported in front by pillars."

Henwood—"Odd bits ov new tember for hez *linney*-house walls." *Conference*, p. 31.

Higham—"Theere's six rooms in un, three downstairs and three up, besides a *linhay* roof, a back kitchen, and a pure tidy size little spence." *Exhib.* p. 136.

Sandys—"LINNEY. A shed for cattle."

Bannister—"LINHAY PARK. Shed close (Teutonic)." "LINNEY. Shed (*lean-to*, modern Cornish) [field]."

Halliwel—"LINHAY. An open shed attached to a farm

yard. *West.* When attached to a barn or house, it is called a hanging *linhay*."

153. "FOOT-HOLT" is the name given about Ashburton to a disease in a cow's foot.

Bannister—"LODECOOMBE. Heifer (*lodn*), or muddy (*lleidiog*, Welsh), or prince's (*leod*, Saxon) vale."

154. *Bray*—"The snake . . . is called the *Long-cripple*. Perhaps from *long creeper*." i. 322.

"LONG-CRIPPLE" is used about Ashburton and Torquay, as a name for snakes and vipers.

Bowring—"LONG-CRIPPLE." *Trans. Devon. Assoc.*, 1866, p. 18.

Palmer—"LONG-CRIPPLE. Viper."

Rock—"LONG-CRIPPLE. Earthworm."

"Jim, go and zarch vor angletwitches
An' blackworms vor tha burds;
Cubabys be good, an' maskills too,
Oakems, ticks, *long-cripples* 'll do;
Kip mun in bits o' shurd." p. 35.

["LONG-CRIPPLE" is used about Looe for all serpent-like and lizard-like animals. W. P.]

T. Q. Couch—"LONG-CRIPPLE. A Lizard: in some parts applied to the snake."

Halliwell—"LONG-CRIPPLE. The speckled viper. *Devon.*"

Grose—"LONG-CRIPPLE. A viper. *Exm.*"

155. *Pulman*—"LONG-TAILED CAP'N (CAPON). The long-tailed tit."

Williams—"LONG-TAILED CAPON. The long-tailed tit-mouse."

156. "LOP" is used about Ashburton and Torquay.

Rock—"LOP-LEGGED. Lame."

Pulman—"LOP. To walk lazily." "LOPPER. One who walks slouchingly."

Barnes—"LOP. To walk or hang about lazily and idly. 'Don't *loppy* about here. Go an' do zome'hat.'" "LOP-LOLLY. One who *lops* and lolls; a lazy or idle person."

["LOP" is used about Looe to signify both lameness and laziness. W. P.]

Halliwell—"LOP. To lollop or lounge about. *Kent.* To hang loosely; to hang down, or droop. *Var. dial.*"

157. "LOWSTER" and "LOOSTER" are used about Ashburton and Torquay.

Palmer—"LOWSTER. Bustle about."

Lock—"LUSTREE, or LEWSTERY. To bustle and stir about like a lusty wench."

["LOWSTER" is used about Looe, where a proverb states that, "He that can't scheme must *lowster*." W. P.]

Tregellas—"I do git my livin', when I do work, a *lousttrin*." *Peeps*, p. 14.

Halliwell—"LOUSTER. To make a clumsy, rattling noise; to work hard. *South*."

Grose—"LUSTREE. To *lustree*, or *lewstery*; to bustle and stir about like a lusty wench. *West*."

158. *Walker*—"MAYGAME. Diversion; sports; such as are used on the first of May."

Perry—"MAYGAME. A sport on the first of May."

"MAYGAME" is used about Torquay.

Palmer—"Her can't abide such *Maygames* and high-delows Sabbath days," p. 15.

Jennings—"MAYGAME. Mā-game. A frolic; a whim."

Williams—"MAGGEMS, MAAYGEAMS. May-games; larking."

Forfar—"I doan't want no mooar of your *maagums*." *Exhib.* p. 65.

Halliwell—"MAY-GAME. A frolic; a trifle, or jest. A *maygame* person, a trifler, now often corrupted to *make game*. The expression occurs in Hollinshed, *Chron. Ireland*, p. 79. 'A *may-game* or simpleton.' *West. and Cumb. Dial.* p. 370."

159. "MAKEWISE" is used about Ashburton and Torquay.

Palmer—"MAKE-WISE. Make believe."

Rock—"MAKE-WISE. To pretend." "Now doant *make wise* an' finey zo." p. 15. [= Now don't pretend gentility in that way. W. P.]

Lock—"Shoor and shoor tha ded'st but *make wise*." p. 7. "And tear (*make wise*) as enny body passath." p. 17.

["MAKEWISE" is used about Looe. W. P.]

Sandys—"MAKE-WISE. Make believe."

Halliwell—"MAKE-WISE. To pretend. *Somerset*."

160. *Palmer*—"MALKIN. Wench; a dirty woman."

Jennings—"MAWKIN. A cloth usually wetted and attached to a pole to sweep clean a baker's oven."

Williams—"MAWKIN (*maäking*). An oven swab; a scare-crow; a bundle of rags."

Barnes—"MAWKEN. A wet cloth fastened to a pole to clean out the oven before setting in the batch."

["MALKING" is used about Looe as a name for a mop of rags used to clean out an oven, and also for a dirty woman. W. P.]

Couch—"MALKIN. A mop of rags attached to a long pole, and used to sweep out an oven; metaphorically, a dirty slut."

Parish—"MAWKIN. A scarecrow."

Thoresby—"MALKIN. A cloth at the end of a pole, where-with, wetting it, they cleanse the bottom of the oven; applied to a slut." "MAWKIN. A dirty frow [*i.e.* woman]." *Eng. Dial. Soc.* B. 17.

Halliwell—"MALKIN. A slattern. *Devon.* It was formerly a common diminutive of Mary. Maid Marian was so called. 'No one wants *Malkin's* maidenhead, which has been sold fifteen times.' *Prov. Milles' MS.* Chaucer apparently alludes to this phrase. *Malkintrash*, one in a dismal-looking dress."

161. *Walker*—"MALL. A stroke; a blow. Obsolete."

Perry—"MALL. To beat; strike with a mall."

"MALLING" or "MAULING" is used about Ashburton and Torquay.

Baird—"To be no vurder *mal'd.*" i. 58.

Wolcot—"My pate was roundly *mauled.*"—*Mid. Elect.*

"Most cussedly the man was *mauled.*"—*Ibid.*

Rock—"MAUL. To touch unseemly; to handle roughly." "An *mauled* en sure anew." p. 33.

["MALLED," or "MAULLED," is used about Looe. W. P.]

Halliwell—"MALL. A hammer or club. Also a verb, to knock down with a mall; to beat. '*Malle hym to dede.*' *MS. Morte Arthure.* '*Malled, felled, or knocked downe.*' *Cotgrave.*"

Prince—"That those protestant nations should *maul* and weaken one the other." p. 552.

Spenser—

"With mighty *mall*

The monster merciless him made to fall."

Faerie Queen, b. i. c. vii. a. 51.

162. *Walker*—"MUNCH. To chew by great mouthfulla." "MUNCHER. One that munches."

Perry—"MUNCH. To eat fast; to chew by great mouthful."

"MANCH" is used about Torquay.

Wolcot—"All the day in *munchin* spent." *Roy. Via.*

Rock—"MAUNCH. To munch; to eat."

Pulman—"MUNCH. To chew. Perhaps from the French *manger*, to eat."

Moore, Cooke—"MANSHE. To chew; to eat."

Jennings—"MANCHE, MUNCHE. To chew. Probably from *manger*, French."

Barnes—"MUNCH. To chew fast."

["MUNCHING" is used about Looe. W. P.]

Couch—"MAWNGE. To chew."

Garland—"MUNGE. To chew. *Munch*."

Hutton—"MUNGE. To chew." *Eng. Dial. Soc.* B. 1.

Halliwell—"MANCH. To munch; to eat greedily."

Shakespeare—"I could *munch* your good dry oats."

Mid. Night's Dream, iv. 4.

"And *mounch'd* and *mounch'd* and *mounch'd*."—*Mac.*, i. 3.

163. *Walker*—"MAST. The fruit of the oak and beech."

Perry—"MAST. The fruit of beech and oak."

"MAST" is used about Ashburton and Torquay.

Jennings—"MACE. Acorns."

["MAST" is used about Looe for the fruit of the oak and beech. W. P.]

Daniel—"I'd rather tamp wilkies and toads in my belly,
Or *oak-masts* and bittles, ur heggs that be addle."

Conference, p. 45.

Halliwell—"MASTED. Fattened as pigs are with *mast*," &c.
See *Prompt. Parv.* p. 151.

Grose—"MASS. Acorns (MAST). *Exm.*"

Prince (quoting Risdon)—

"Our lofty tower'd trees, in times that are forepast,
Did to the savage swine let fall our larding *mast*." p. 463.

Shakespeare—"The oaks bear *mast*, the briars scarlet hips."

Tim. Ath. iv. 3.

164. [See "MORIS" in Mr. Marshall's list. W. P.]

"MORS" is used about Ashburton and Torquay.

Lake—"MAUR. A root of a tree or plant, or of a tooth."

Palmer—"MORIS. Roots. 'The flower *mores* that creas'd
too much, her zet in the field.'" p. 54.

Rock—"MORR (MAUR). A root."

"Tha luve that hath a jillus *mor*
'll bear a bitter vruit." p. 8.

Pulman—"MORTS. The larger roots of a tree, as MORS
are the smaller ones."

Moore—"MAUR. A root."

Jennings—"MORE. To root; to become fixed by rooting.
A root."

Williams—"MORE, MOREY. To take root. Applied to
trees."

Barnes—"MORE. The root of a flower or small plant."

"How proud wer I when I vust cood zwim
Athirt the deep pliace wher thee bist growen,
Wi' thy long *more*, vrom the bottom dim."—*The Clote*.

["MOR" is used about Looe, where, in the case of small plants, it signifies the entire plant, and not the root merely: thus a "polyanty *mor*" would signify a polyanthus plant. In the same district, the complete extirpation of any party or thing would be denoted by the proverbial expression, "We've turn'd em out *mor* and mool;" i.e. root and soil or mould. W. P.]

Couch—"MAUR, or MOOR. A root or fastening. '*Maur* and Mool,' a common expression for root and mould. Hence perhaps comes to *moor* a vessel."

Fox—"Nack'd the mabjers boath steff, we a gert *maur* o' fuss." [= Struck the chickens with a great root of the furze-bush, and killed them both. W. P.]

Garland—"MORES. Roots of a tree by which it is *moored*—fastened as by anchors."

Sandys—"MAUR. A root."

Cooke—"MORE. A root."

N. & Q.—"MORE is a well-known English word. See the examples in *Stratmann*. It occurs in *Piers the Plowman* (B-text, xvi. 5), and means a *root*. In Devonshire it is a turnip; but the German *möhre* is a carrot, and the A.S. *weal-mora* is a parsnep. It can be traced back to the Old High German *morha*, a carrot or root." 4th S. vi. 259.

Hallivell—"MORE. A root. *West. Morede*, rooted up. *Rob. Glouc.* p. 499. In our Western language *squat* is a bruise, and a route we call a *more*. *Aubrey's Wilts., Royal Soc. MS.* p. 127."

Grose—"MAUR, or MORE. 'A strawberry-*maur*,' or '*more*.' Perhaps hence the word *mored* for rooted." "MOREING-AX. An ax for grubbing up the roots of trees. *Glouc.*"

Spenser—"And all the earth far underneath her feet
Was dight with flowers, that voluntary grew
Out of the ground, and sent forth odours sweet:
Ten thousand *mores* of sundry scent and hue,
That might delight the smell, or please the view."

Faerie Queen, c. vii. s. 10, vol. iv. p. 194.

165. *Walker*—"MAUL. To beat; to bruise; to hurt in a coarse or butcherly manner."

Perry—"MAUL. To beat; to bruise."

"MAUL" is used about Ashburton and Torquay.

Pulman—"MAUL. To pull about teasingly or indelicately."

Shakspeare—

“Put up thy sword betime;
Or I'll so *maul* you and your toasting-iron,
That you shall think the devil is come from hell.”
King John, iv. 3.

166. *Walker*—“MAZE. Confusion of thought; uncertainty; perplexity. To bewilder, to confuse.” “MAZY. Perplexed; confused.”

Perry—“MAZE. Perplexity.” “MAZY. Perplexed; confused.”

Bray—“A poor mad woman . . . who, in consequence of being harmless, is suffered to go free; . . . the poor *mazed* woman has an undoubted privilege.” iii. 60.

[“MAZED” is used about Ashburton and Torquay.]

Lake—“MAZED. Silly or insane.”

Baird— “Pore Palmer zim'd tuk'd in a vit,
An *mase-like* zim'd ta stare.” ii. 27.

Wolcot— “I haant so *mazed* to put belief
In every dirty lying thief.”—*Mid. Elect.*

Palmer—“You zim he's *maz'd*.” p. 5.

Rock—“MAZED. Mad.” “Et made ma amost *mazed*.” p. 10.

Pulman—“MAZED. Mad. Used in this sense by the old writers.”

Jennings—“MIZMAZE. Confusion.” “Tha zâ I'm *mazed*.” p. 128.

Williams—“MIZMAZE. Confusion.”

[“MAZED” is used about Looe. W. P.]

Couch—“MAZED. Bewildered; crazed; or mad. MIZMAZE means confused.”

Daniel—“Like a gate flop o' lightning gon *mazed* an brok loos.”—*Conference*, p. 44.

Forfar—“He's gone down through the town like a *mazed* man.”—*Exhib.* p. 30.

Gervis—“He's *mazed* a musicianer, suare, for to be.”—*Ballads*, p. 35.

Higham—“My maid Maary, she's *maazed* to have waun of thaise heere g'eat crinolings.”—*Exhib.* p. 133.

Sandys—“MAZED. Bewildered.” “MAZEDISH. Confused.”

Tregellas—“MAZED. Mad.” “He must be *mazed* or drunk.”

—*Tales*, p. 22.

Parish—“MIZMAZE. Confusion. ‘He came upon me so quick, and axed me so suddent, I was all of a *mizmaze*.’”

Harland—“MAZE. To amaze; to astonish.” “MAZELING, A simpleton.”—*Eng. Dial. Soc.* C. i.

Thoresby—“MAZED. ‘A *mazed* goose,’ applied to a person

astonished; amazed, per aphoresin. [On the contrary, *amazed* is derived from *mazed*.]—*Ibid*, B. 17.

Halliwel—"MAZLE. To wander as if stupefied. *Cumb.*"
"MIZMAZE. Confusion."

Grose—"MAZ'D, or MAZED. Mad. *Exm.* 'A mazed man; a crazy or mad man.'"

Shakspeare—

"The mazed world,
By their increase, now knows not which is which."

Mid. Dream, ii. 2.

167. *Burns*—"But aye keep mind to moop and *mell*
Wi' sheep o' credit like thysel'."

Poor Mailie, lines 55-6.

Halliwel—"MELL. To mix or mingle. *North.* Derived from the old word *Melle*. I halde this *mellide* lyfe beste and naste byhovely to thame als lange als thay ere bowndene thereto. *MS. Lincoln*, A. i. 17; f. 223." "MELLING. Mixing (A.S.). Hence, copulation, as in the following passage. Modern editors repudiate the indelicate meaning of *Mell* in *All's Well that Ends Well*, iv. 3; but its meaning (*futuo*) is clear beyond the shadow of a doubt. 'And a talle man with her doth *melle*.' *Cov. Myst.*, p. 215."

"Like certeyn birdes called vultures,
Withouten *mellyng* conceyven by nature."

Lydgate, *MS. Ashmole*, 39, f. 32.

Thomson—" (So worked the wizard) wintry storms to swell,
As heaven and earth they would together *mell*."

Castle of Indolence, a. 43.

Shakspeare—"Men are to *mell* with, boys are not to kias."

All's Well, iv. 3. Letter.

Spenser—"What tiger, or what other savage wight,
Is so exceeding furious and fell

As Wrong, when it hath arm'd itself with might;

Not fit 'mongst men that do with reason *mell*,

But 'mongst wild beasts, and savage woods to dwell."

Faerie Queen, b. v. c. ix. a. 1.

168. "MIFF" is used about Ashburton and Torquay.

Palmer—"MIFF. Offended."

Pulman—"MIFF. Offence. 'He's *miff'd* (offended) wi' I.'"

Jennings—"MIFF. To give a slight offence; to displease.
A slight offence; displeasure."

Barnes—"MIFF. An offence; a coolness between friends
or neighbours."

["NIFF" and "NIFT" are used about Looe. W. P.]

Couch—"NIFT. A slight offence; a 'tiff.'"

Garland—"NIFF. Disagreement; quarrel."

Parish—"MIFF. To give slight offence; to displease."

Halliwell—"MIFF. Displeasure; ill-humour, but generally in a slight degree. *Var. dial.*

'Deal Gainsborough a lash, for pride so stiff,

Who robs us of such pleasure for a *miff*.'—*Peter Pindar*, i. 81."

"NIFF. To quarrel; to be offended. *West.*"

169. "MOCK" is used about Ashburton as a name for ground apples after pressure has been applied to the pulp. After being ground, but before being pressed, the pulp is called *pummy* [probably a corruption of *pomage*. W. P.] "Mock" is used about Torquay as a name for the ground apples.

["MOCK," or "MUCK," is used about Looe as a name for the fruit after it has been ground, but before it has been pressed. After its pressure it is there called *Cheese*. W. P.]

Halliwell—"MOCK. Ground fruit. *Devon.* The pomage."

170. *Walker*—"MOODY. Out of humour."

Perry—"MOODY. Displeased; angry."

"MOODY" = angry, and "MOODY-HEARTED" = easily moved to tears, are used about Ashburton and Torquay.

Bowering—"MOODY-HEARTED. Melancholy." *Trans. Devon. Assoc.*, 1866, p. 36.

Palmer—"I'm a poor *moody-hearted*, timersome body." p. 35.

Rock—"MOODY-HEARTED. Weak-hearted; dispirited." "I *moody-hearted* got to be." p. 10.

["MOODY-HEARTED" is used about Looe to denote a liability to tears. W. P.]

Halliwell—"MOODY. Angry. 'Mody angerfull, ireux, attayneux.' *Palsgrave.*" "MOODY-HEARTED. Melancholy. *West.*"

Shakspeare—"Sweet recreation barr'd, what doth ensue

But *moody* and dull melancholy."—*Com. Err.* v. 1.

171. "MOOSTER" is used about Ashburton and Torquay.

Williams—"MOUSTER. To stir; to be moving."

["MOOSTER" is used about Looe. W. P.]

172. "MOOT" is used about Torquay.

Rock—"MOOT. To root out roots of trees." "*Moot* iv'ry brack about un." p. 24. [= Root out, or expose, every flaw he has. W. P.]

Pulman—"MOOTS. The larger roots of a tree."

Moore, Cooke—"MOOT. To root up."

Jennings—"MOOT. To root up. A stump or root of a tree."

Williams—"MOOT. To root up. That portion of a tree left in the ground after it has been felled." "MOOTING-AXE."

Barnes—"MOOT. The root of a felled tree."

Daniel—"At stons, an' *mots*, an' pooks we'll loff." *Companion*, p. 25.

173. "MOPT" is used about Ashburton and Torquay.

Palmer—"MOPT. Blindfold."

["MOPT" = Blindfolded is used about Looe, where I have also heard it applied to horses wearing blinkers. In the same district the blinkers are sometimes termed MOPS. W. P.]

Halliwel—"MOP. To muffle up." "MOP-EYED. Short-sighted. See the *Muse's Looking Glass*, 1643, p. 58." "MOPPER, A muffler. *Somerset*." "MOPT. Deceived; foiled. *Devon*."

174. [See "MAURS" in Miss Fox's List. W.P.]

175 and 176. *Walker*—"Mow. A loft or chamber where any hay or corn is laid up." "MOWBURN. To ferment and heat in the *mow* for want of being dry."

Perry—"MOW. A heap of hay or corn."

"MOW" and "MOWHAY" are used about Ashburton and Torquay.

Baird—"Took et vur a barly *mow*."—i. 50.

"An thare ha lide in wan tha *mow*."—ii. 44.

Rock—"MEWSTADDLE. A frame on which the *mow* is set." "MEWSTEAD. Place where the *mows* are set." "Our *mewstead's* beggest *mow*." p. 11. "Witch ellem timbers vor *mewstaddle*." p. 21.

Pulman—"MOW (pronounced to rhyme with *now*). A corn stack. So, MOW-STADDLE, the frame upon which the *mow* is erected; and MOW-BARTON, the yard in which the *mows* are placed."

Williams—"MOW-STADDLE. A conical stone with a flat circular cap, used for the support of a *mow* or stack of corn."

Barnes—"Tis al up siafe in barn ar *mow*." *A Zong or Harvest Home*.

["Mow, Moo, MOWHAY, MOOHAY," are used about Looe. W. P.]

Couch—"MOWHAY. The enclosure where stacks and *mows* are made."

Bannister—"MOW-PLOT. Stack-piece." "MOWHAY. The stack (*mow*) enclosure, (*hay*) Teutonic."

Willan—"MOW. A rick." *Eng. Dial. Soc.* B. 7.

Burns—"Commend me to the barn-yard
And the 'corn-mou' man."—*Plowman*, s. 6.

Hallivell—"MOW. A stack of corn, &c. *Var. dial.*"
"MOW-BURNT-HAY. Hay which has fermented in the stack.
Yorksh." "MOWHAY. A barton or inclosure for ricks of hay
or corn. *Devon.*"

Grose—"MEW. A mow of corn or hay."

[See "The Barley Mow Song," in "The West Country
Garland," which, says the Editor, R. N. Worth, F.G.S., "is an
old Devonshire song of very ancient date." W. P.]

177. *Rock*—"MALLEY. A donkey; a female ass." "Dra
popples wi' a *Malley*." p. 11.

Bannister—"MULLIS. A she mule, or ass."

[I once, and, so far as I remember, only once, heard the
word MULLY used, and then it occurred in a conversation
under the following circumstances:—In one of the streets of
Torquay I met a man leading a mule just as they turned
into another street at a sharp angle. Behind me was a man,
having the appearance of a farm labourer, walking in the
same direction as I was, and he was followed, at a consider-
able distance, by his son, about nine or ten years old. On
catching sight of the mule, the father shouted to his son,
"Jan, Jan, here's a *Mulley*. Ren, Jan, quick."

"What es a *Mulley*, father?"

"Why a thing, Jan, what had a jack-ass for his father and
a 'oss for his mother. Ren, Jan, do 'e."

Pulman has, in his Glossary, "MULE. The offspring of the
he-ass and the mare;" but it is not easy to see why he
regards the word as dialectical or a provincialism, as it occurs
in our English dictionaries. The prevalent name for the
mule throughout Devon and Cornwall, however, is MOYLE
or MOIL. Thus, *Lock* has "MOIL, or MOYLE. A mule;"
Grose, "MOYLE. A mule. *Exm.*;" "MOYLE" is used about
Loce; *Couch*, "MOYLE. Mule; hybrid between stallion and
female ass;" and "MUTE. The hybrid between the male ass
and mare;" *T. Q. Couch* agrees with his father, with the
exception that he spells the word MOIL; *Sandys* has, "MOILES.
Mules;" and *Tregellas*, "MOYLE. Mule." *Hallivell* has
"MULET. A mule. *Yorksh.*" I have known several persons
named *Moyle*; and according to Mr. Couch "the Cornish
family of Moyle, formerly resident at Bake, bear a mule in
their shield." W. P.]

178. "NEARTS" is used about Ashburton and Torquay.

Palmer—"NEARTS. Nights."

Rock—"And naybors all 'tis gitting *neart*." p. 14.

Lock—"Stayed up all the *neert* a roasting o' taties." p. 14.

"Well, cozen Margery, good *neart*." p. 29.

Halliwell—"NEART. Night. Devon."

[The substitution of *r* for *gh*, as in *Nearths* for *Nights*, and also, but less frequently, for *f*, as in *Sart* for *Soft*, is prevalent in some parts of Devonshire. Thus, "Yude zee bags *arter* bags uv *harbs*" (=you'd see bags after bags of herbs), *Baird*, i. 50. "Stair *arter* stair," *Palmer*, 25. "Nat a single skiddik *bort*" (=not a single thing bought), *Baird*, i. 35. "Whan es *bort* en" (=when I bought it), *Lock*, 23. "An *brort* Jan Scrape tha Crowder wi' em" (=and brought John Scrape the fiddler with them), *Rock*, 5. "Zoon *arter* *Cockleert*" (=soon after cock-light, i.e. daybreak), *Baird*, i. 29. "Avore tha *cock-leart*" (=before the cocklight), *Rock*, 4. "By *cockleert*, or a vore," *Lock*, 11. "Then ha wis *cort*" (=then he was caught), *Baird*, i. 32. "Us wur *cort*," *Rock*, 20. "*Cort* ma about the neck," *Lock*, 21. "Tha *cortst* the natted yeo" (=thou caughtst the not-headed, i.e. hornless, ewe), *Lock*, 14. "Ta shaw auff thare *darter*" (=to show off their daughter), *Baird*, i. 28. "The mother and *darter*," *Palmer*, 13. "Tell en *downreert*" (=tell him downright), *Lock*, 24. "At *mid-neart*, as zoon as mid-day," *Palmer*, 5. "That he *meart*" (=that he might), *Palmer*, 32. "Hare's *mearty* well to pass" (=her is mighty well to pass, i.e. she is very well off), *Lock*, 27. "Thee *mert* be owner of the houze" (=thou might be owner of the house), *Palmer*, 57. (For *NORT*, see Miss Fox's list.) "I can't tell *ort*" (=I can't tell ought), *Baird*, i. 62. "I'd make et treason to drink *ort* but organ tey," *Palmer*, 7. "Zet tha about *ort*," *Lock*, 11. "A zennet *outreert*" (=a sev'night outright), *Lock*, 14. "Jim is all *reart*" (=Jem is all right), *Rock*, 9. "Cassent zee a sheen in thy *reert* ee" (=Canst not see a shine in thy right eye), *Lock*, 11. "*Rearting* tha peels" (=righting the pillows), *Lock*, 23. "A gettin *sart*" (=getting soft), *Lock*, 11. "Ee es net zo *zart* a-baked" (=he is not so soft baked, i.e. so silly), *Lock*, 24. "Geese ould Brock up *teart*" (=girth old Brock, i.e. the horse, up tight), *Rock*, 14. "Tha wut lee a rope *up-reert*" (=thou wilt lie a rope upright, i.e. tell such a lie that even a rope would stand upright with astonishment, though it habitually *lies*), *Lock*, 12. "Why es *thort* you couldent a *vort* zo" (=why I thought you couldn't have fought so), *Lock*, 20. "Zet *zeert* in Harry Vursdon" (=set sight in Harry Fursdon), *Lock*, 8.

"Zindey or a Zindey-zenneert" (= Sunday or Sunday sev'n-night), *Lock*, 24. W. P.]

179. *Halliwel*—"NECESSITY. Bad, illicit spirit. *Devon*."

180. "NIMPINGANG" is used about Ashburton and Torquay.
Palmer—"NIMPINGANGS. Boils."

Rock—"NIMPINGANG. A whitlow."

Williams—"NIPPINGANG, NIMPINGANG. A whitlow."

["NIMPINGALE" is used about Looe. W. P.]

Couch—"NIMPINGALE. A whitlow."

181. "NORT" is used about Ashburton and Torquay.

Baird—"An ad nort moar ta du way girt Exter vair." i. 8.

Wolcot—"Twas stoopid to treat vokes for nort."—*Roy. Vis.*

"Drink nort but dead small beer."—*Mid. Elect.*

"All that remained was good for nort."—*Ibid.*

Palmer, Rock—"NORT. Nothing."

Lock—"Nort but agging, and veaking, and tiltishness." p. 9.

"Good for nort but scollee." p. 16. "Why, fath, . . . nort marchantable." p. 19. "That's nort to nobody." p. 30.

Pulman—"NORT. Nothing. 'Tiddn wuth nort.' Used chiefly in East Devon, and never heard in the Crewkerne district."

Jennings—"NORT. Nothing (West of the Parret)."

Williams—"NURT, or NORT. Nothing (W. of the Parret)."

["NORT" is used about Looe. W. P.]

Tregellas—"NORT. Nothing." "Twas nort but fearfulness."

Tales, p. 10.

Harland—"NOWT. Nothing." *Eng. Dial. Soc. C. 1.*

Halliwel—"NORT. Nothing. *Somerset*."

182. *Perry*—"NOTT. To shear; crop; cut short."

"KNOTT," "NOTT," or "NOT," is used about Ashburton and Torquay to denote hornless sheep or bullocks.

Vancouver—"A cross of the new Leicester with the Bampton Nott." p. 343. "The old Devonshire dim-faced nott sheep." p. 347.

Jennings—"NOT-SHEEP. A sheep without horns."

Williams—"KNOT-SHEEP. Sheep without horns."

Barnes—"NOT. (A.S. *Hnot*, shorn or clipped.) Without horns, as a not cow, a not sheep."

[The following riddle was popular about Looe in my boyhood:—

"A white sheep and a black,
A horned sheep and a *not*,
A long-tailed sheep and a short-tailed sheep,
And how many sheep be that?"

The answer was "one;" as a black, horned, long-tailed sheep, on being killed and skinned, would be white, hornless, and short-tailed. *Not*, in the case of hornless sheep, was always pronounced so as to rhyme with *that*. W. P.]

Marshall, 3—"NOT. Polled; hornless; spoken of sheep and cattle." *Eng. Dial. Soc.* B. 4.

Parish—"NOTT. [*Hnot*, Ang. Sax., *shorn*; cut.] Polled; said of sheep or cows without horns. 'Mus' Stapley, he's been and bought some more of these here *not* cows. I can't fancy them things no-hows-de-warreld."

Ray, S. & E.—"NOT and NOTTED; i.e. Polled; shorn. *Ks.* ab. A.S. *hnot*, ejusdem significationis. [A.S. *hnot*, shorn."] *Eng. Dial. Soc.* B. 16.

Halliwel—"NOT. Smooth; without horns. *Var. dial.* Hence to shear or poll. NOTHEAD. A craven crown."

Grose—"KNOT. Polled; hornless. Spoken of sheep and cattle. *Glouc.*" "NOT. Smooth; polled; or shorn." "NOT-SHEEP. Sheep without horns. *Essex.* 'That field is *not*;' that field is well-tilled. *Berksh.*"

[*Carew* has "NOTWHEAT, so termed because it is vnbearded," p. 20; and *Walker* has "NOT. It denotes cessation or extinction," and "NOTWHEAT. A kind of wheat unbearded." W. P.]

183. "OAK-WEB" is used about Ashburton and Torquay.

Bowring—"OAK-WEB." *Trans. Devon. Assoc.*, 1866, p. 18.

Palmer—"OAK-WEB. Cockchafer."

Rock—"OAKEBB, OAKEM. The cockchafer."

Williams—"OAK-WEB (WUCK-UB). Cockchafer; Maybug."

["OAK-WEB" is used about Looe. W. P.]

N. & Q.—"The common beetle called cockchafer is here [Launceston, Cornwall. W. P.] known only as the *oak-web*, and a smaller beetle as *fern-web*." 1, S. iii. 259.

Halliwel—"OAK-WEB. The cockchafer. *West.*"

184. "OFT" is used about Ashburton and Torquay.

Baird—"An sard 'n as ha *aufi* ta be." i. 57.

["OFT," or "AUFT," is used about Looe. W. P.]

Daniel—"Thees *hoft* to know better."—*Evenings*, p. 23.

"I *aufi* to be strep'd bara."—*Ibid.*, p. 48.

Forfar—"We should think that he *oft* for to know."—*Exhib.* p. 4.

"You should *oft* for to be ashamed of yourself."—*Ibid.*

Gervis—"You *aust* to be hooted out of the town." *Ballads*, p. 31.

Tregellas—"OFT. Ought." "Every man *oft* to have hes awn fancy."—*Tales*, pp. 71-2.

["OFT" is of course *Ought* pronounced as if the combination *gh* had the power of *f*, as in *Laughter*. This occurs in the counties of Somerset, Devon, and Cornwall, and especially the last, in several other words not pronounced so usually. Thus, "Our friend *bost* the Bâl" (= our friend bought the mine), *Forfar, Exhib.* 9. "I . . . *bost* this ere house" (= I bought this here house), *Tregellas, Peeps*, 14. "And *broft* I an Jan each a cheear" (= and brought I an Jan each a chair), *Forfar, Exhib.* 7. "They arn't as you *broft* 'em," *Gervis, Ballads*, 39. "And *broft* the groceries and that weth her," *Higham, Exhib.* 137. "They only loffed, and never *broft* it," *Tregellas, Tales*, 32. "He took a fancy to . . . the passon's *dafter*," *Forfar, Exhib.* 30. "My poor *dafter*," *Higham, Exhib.* 137. "As Jan zed this he haiv'd a *sife*" (= as Jan said this he heaved a sigh), *Baird*, i. 70. "*Sifing* has been replaced by sighing," *Bowering, Trans. Devon. Assoc.*, 1866, p. 17. "*Sift* and look'd like wan quailing away" (= sighed and looked like one fainting away), *Palmer*, 8. "Tha wine, [*i.e.* wind, W. P.] manget thy boughs, *sifes*," *Jennings*, 82. "All day long I *sof* and swet" (= all day long I sigh and sweat), *Daniel, Wit.* 3. "Took a bard out o' a springle . . . and told to en as *thof* a' had a' be telling to a Christian" (= took a bird out of a springle and spoke to it as though he had been speaking to a human being), *Palmer*, 5. "Shek th' houze as *thof* was gwine ta vall" (= shook the house as though it was going to fall), *Pulman*, 44. "As zum ool, *thawf* pon starvin" (= as some will, though nearly starving), *Jennings*, 85. "*Thof* I'm cleck-handed" (= though I'm left-handed), *Daniel, Thalia*, 5. "*Thof* it do look jest the same," *Gervis, Ballads*, 35. "I *thoft* you wor gone out" (= I thought you were gone out), *Forfar, Exhib.* 88. "I *thoft* I shud see," *Gervis, Ballads*, 30. "I *thoft* I wud go to Lunnon," *Higham, Exhib.* 66. "Turn out my *thoufts*," *Miles, Ballads*, 58. "That I *thoft* would never do," *Tregellas, Tales*, 27. "You *thoft*, I s'pose, I shouldn't come," *Verrall, Exhib.* 41.

[Of the foregoing illustrations of the pronunciation under notice, two were used about Looe in my boyhood. Thus a female child was sometimes called a *dafter*, and I recollect that

"All the birds of the air fell a *sifing* and sobbin',
When they heard the bell tolling for poor cock-robin." W. P.]

185. "OLD SODGER" is used about Ashburton and Torquay.
["OLD SAWJUR" is used about Looe. W. P.]

186. "AWMS" is used about Torquay.
Palmer—"OMES. Alms."

187, 188. *Walker*—"ORDAIN. To appoint; to decree; to establish."

Perry—"ORDAIN. To decree; appoint; settle; establish."

"ORDAIN" and "ORDAINED" are used about Ashburton and Torquay.

Pulman—"ORDAIN. To intend. 'I do *ordain* to be there.'"

Jennings—"ORND, *pret.* ORDAINED. Fated."

Williams—"ORDAIN. To purpose."

["ORDAIN" and "ORDAINED" are used about Looe. W. P.]

Carew—"Brought into a great room *ordained* for that purpose." p. 14.

Halliwell—"ORDAIN. To order; to intend. *Devon.*"

Skakespeare—"Out of your grace, devise, *ordain*, impose
Some gentle order."—*K. John*, iii. 1.

"When first this order was *ordain'd*, my lords,
Knights of the garter were of noble birth."

1 *Henry VI.*, iv. 1.

"Our ancestor was that Mulmutius, which
Ordained our laws."—*Cym.* iii. 1.

"All things that we *ordained* festival,
Turn from their office to black funeral"

Rom. & Ju. iv. 5.

189. *Bray*—"Who . . . would ever guess what was meant by *organs' tea*, an excellent potation for a cold, and here much in request." i. 333.

"ORGANS" is used about Ashburton and Torquay as a name for the pennyroyal.

Palmer—"ORGAN. Penny royal."

Rock—"ORGANS. The herb pennyroyal."

"Jist put her tooties in hot watter,
An' gie'r a few strang *organs* arter,
Or else some featherfowl" p. 6.

[= Just put her toes in hot water, and give her a little strong tea of pennyroyal or fever-few afterward. W. P.]

Pulman—"ORGIN. The herb pennyroyal."

Barnes—"ORGANY (A.S. *Organe*). The herb Penny-royal"

["ORGAN" and "ORGAN-TEA" are used about Looe. W. P.]

Halliwell—"ORGAN. The herb pennyroyal."

190. *Walker*—"ORTS. Refuse; that which is left."

Perry—"ORTS. That which is left; refuse."

"ORTS" is used about Ashburton, and "ORCH" about Torquay.

Bowring—"ORTS. Refuse." *Trans. Devon. Assoc.*, 1866, p. 27.

Palmer—"ORTS. Fragments; refuse."

Rock—"ORTS. Scraps; refuse."

Pulman—"ORTS. Scraps; waste or broken victuals. 'Gie the poor fellow a vew *orts*.'"

Williams—"ORTS. Scraps; leavings."

Barnes—"ORTS (A.S. *Orettan*, to spot; to defile). Waste hay left by cows fed a-field, being dirtied or spoilt by their treading on it."

["ORTS" is used about Looe. W. P.]

Parish—"ORTS. Odds and ends; fragments of broken victuals.

'The fractions of her faith, *orts* of her love,
The fragments, scraps, the bits, and greasy reliques,
Of her o'er-eaten faith, are bound to Diomed.'

Troilus and Cressida, act v. sc. 2."

Halliwel—"ORTS. Scraps; fragments. *Var. dial.* It is a common archaism."

Grose—"ORTS. Fragments of victuals. 'Don't make or leave *orts*;' don't leave any fragments on your plate. *C.*"

Shakspeare—"It is some poor fragment, some slender *ort* of his remainder." *Tim. Ath.* iv. 3.

191. *Bannister*—"OVERLAND. Upper land or field. *Teutonic.*"

Halliwel—"OVERLAND-FARM. A parcel of land without a house to it. *Devon.*"

192. *Palmer*—"PANKING. Panting."

Rock—"PANKING. Panting." "A *panking*, pluffy nestle-draff." p. 25. [= A panting, spongy (*i.e.* deceptive, insincere), last of the set (*i.e.* last born of the family, or defective as compared with the others of the family). W. P.]

Lock, Pulman, Williams, Barnes—"PANK. To pant."

Daniel—"How he ded poof, an' *pank*, an' blaw." *One and All*, p. 37.

Grose—"PANKING. Panting. *Exm.*"

193. *Perry*—"PASSAGE. A journey by water."

Pulman—"PASSAGE. The ferry at Axmouth is called *The Passage.*"

Carew—"The *passage* . . . much haunted as the highway to Plymouth." p. 100. "Benefit of the *passage*." p. 112. "The ordinary *passage* . . . over Foy river." p. 132.

[Devonport is connected with Cornwall by two **PASSAGES** or ferries—one from Cremyl to Mutton Cove, known as *Cremyl Passage*; and one from Torpoint to Morice Town, termed *Torpoint Passage*. Indeed, Morice Town is popularly named *New Passage* from this ferry. **PASSAGE** is similarly used in Gloucester and Monmouth shires, as is seen in the **NEW PASSAGE** across the Severn. W. P.]

194. "**PICKING EARS**" is used about Ashburton and Torquay.

195. "**PIG'S LOOSE**" is used about Ashburton and Torquay.

Wolcot—"A pig that's in the *looze*." *Mid. Elect.*

Palmer—"PIG'S LOOSE. Pig's sty." *West.*

Rock—"PIG'S-LOOZE. A pigstye." "I've a-zent to thee *peg's looze*." p. 21.

Pulman, Jennings, Williams—"PIG'S LOOZE. Pig's sty."

Bannister—"PIG-LOOSE ? = PARK CLOSE = PARK CLUSE = PARK COLAS. Green (*glas*), or church (*eglos*), or bottom (*goles*)."

Cooke—"PIG'S LOOZE. A pig's-stye."

Halliwel—"PIGS-LOOSE. A pigsty. *West.*"

Grose—"LOOZE. A hog stye. *Exm.*"

196. *Walker*—"PIKE. A fork used in husbandry."

Perry—"PIKE. Fork."

"**PICK**" is used about Ashburton and Torquay.

Baird—"An vundermoar ha then did stick

Up droo, a sharp two-vorkid *pick*." i. 67.

Rock—"PICK. A hay or pitch fork."

Pulman—"PICK. A pitchfork."

Moore—"PIKE, PEEK, or PICK. A hay fork."

Jennings—"PICK. A pitch-fork; a two-pronged fork for making hay."

Williams—"PICK, PEEK. Hay fork."

Barnes—"PICK (from peak, a sharp body). A hay fork, or dung fork."

["PIKE" is used about Looe for a hay fork, not a dung fork. W. P.]

Halliwel—"PICK. A pitchfork. *North.*" "PIKE. A hay-fork. *Glouc.*"

Grose—"PEEK. A prong or pitch fork. *Exm.*"

197. "PILLEM" is used about Ashburton and Torquay.

Baird—"An a kick'd up tha *pilamy* and made such a stewarter." i. 32.

Wolcot—"Zom in the mucks, and *pellum* sprawling." *Roy. Vis.*

Palmer, Rock—"PILM. Dust."

Lock—"PILM. Flying dust."

Pulman—"PILLAM, or PILM. Dust."

Moore, Cooke—"PILM. Dust."

Jennings—"PILM. Dust; or rather fine dust, which readily floats in the air."

Williams—"PILM, PILLUM. Dust."

["PILLEM" is used about Looe. W. P.]

Couch—"PILM, PILLEM. Dust."

Daniel—"Then i a rode weth *pillam* chook'd."—*One and All*, p. 33.

"Up to eyes in *pellum* and dirt."—*Thalia*, p. 8.

Carew—"PILME. The dust which riseth."

N. & Q.—"PILLOM is the full word, of which PILM is a contraction. It appears to have been derived from the British word *pylor*, dust." 1st S. viii. 44.

Halliwell—"PILM. Dust. *Devon.* Grose has *Pillum*. Hence *pilmy*, dusty."

Grose—"PILMER. A *pilmer*; a shower of rain, small and thick as dust. *Devonsh.*" "PILN, or PILM. Dust raised by the wind; road dust. *Devonsh.*"

198. "PINDY" is used about Ashburton and Torquay.

Lake—"PINDY. Used of meat kept too long. ? From *pindam*, to shut in; as the word *close* is used of ill-smelling rooms."

Palmer—"PINDY. Mouldy."

Williams—"PIND, PINDY. Fusty, as corn or flour."

["PINDY" and "PRENDY" are used about Looe, as signifying tainted, and are chiefly, but not exclusively, applied to butcher's meat. W. P.]

Couch—"PRENDY. Tainted (applied to butcher's meat)."

Halliwell—"PIND. Tainted; mouldy; said of meat."

199. "PITCH" is used about Ashburton and Torquay.

Lock—"PUTCH. To *pitch* up corn and hay to the mow or zess with a *pitch* fork."

Pulman—"PITCH. To load hay in the hay field."

Barnes—"PITCH. To put or throw up hay on a waggon."

["PITCH." To throw up corn or hay to the mow or a waggon with a fork or *piks*, is used about Looe. W. P.]

Halliwel—"PITCH. The quantity taken up at one time on a hay fork. *West*. Also to load hay or straw."

Grose—"PUTCH. To hand (*pitch*) sheaves, or the like, with a pitch fork. *Exm.*"

200. *Bray*—"A *pisgy* had let he out." i. 323. "*Piskie House* on the side of Sheep's Tor." iii. 101-2. "It is not uncommon in deep mines . . . to hear loud and frequent explosions . . . where no miners are at work: these noises the men believe to be occasioned by the working of the fairies or *pixies*, whom they call *small men*." iii. 256.

"PISKY" is used about Ashburton, and "PIKSY" about Torquay.

Baird—"Ha'd uny jist bin *picksy* laid." ii. 44.

Wolcot—"To laugh like any *pisky*." *Mid. Elect.*

Palmer—"PIXY. Fairy." "And my cloak inzide out. Well, us shan't be *pixy* led." p. 20.

Rock—"PIXY. A Devonshire fairy." "PIXY-LED. Led by fairies." "PIXY-STOOL. A fungus."

Lock—"PIXY, or PIGSNYE. A fairy." "TEEHEEING PIXY. Laughing fairy or goblin."

Pulman—"PEXY (PIXY). The Devonshire *pixies* have long had a wide reputation. . . . They are a species of fairy much busied with the affairs of mortals, and full of mischief. . . . *Pixies* are said by the Devonshire peasants to be the souls of unbaptized infants. PEXY-LADEN, PIXY-LED. Led by *pixies*. PEXY-WORD. The *pixy's* hoard, or what is left after the 'picking.' The few remaining apples upon a tree, the crop of which has been gathered. . . . PEXY-WORD is the term in the neighbourhood of Axminster, and, I believe, in Devonshire generally. In the neighbourhood of Crewkerne the same meaning is conveyed by COL-PEXY."

Moore—"PIXIES, or PISGIES. Fairies."

Jennings—"PIXY. A sort of fairy; an imaginary being." "PIXY-LED. Led astray by *pixies*." "PIX, PIXY. To pick up apples after the main crop is taken in; to glean, applied to an orchard only."

Williams—"PIXY. A fairy." "PIXY-STOOL. Toad-stool." "PIX, PEX, or PIXY. To pick up fruit, as apples or walnuts, after the main crop is taken in."

["PISKY" and "PISKY-LED" are used about Looe. W. P.]

Couch—"PISKY. An elf or fairy."

Daniel—"He like a *piskey* laft." *Portfolio*, p. 25.

Garland—"PISKEY. Probably a corruption of *Pixia*. The veritable Cornish *Piskey* has some qualities which are pecu-

liarly its own. The *Piskey* delights in playing tricks upon benighted travellers, leading them over trackless commons, or to the edge of quagmires or precipices; generally leaving them in a position of extreme peril, from which it is dangerous to move till daylight. The only mode by which a victim to the caprices of a *Piskey* can release himself is by turning his coat inside out. Why such an effect should follow so unlikely a cause is a question we would rather refer to so learned a body as the Royal Society, it being beyond the powers of a provincial institute to grapple with such a mystery."

Sandys—"PISKY. A fairy. *Pisky* (Cornish), a fairy. There are several remains of these in the *West*."

Bannister—"PISKEY-PARK = PISCAY-PARK = PIXEY-PARK. Fairy close."

Cooke—"PIXIES, or PISGIES, are represented in the traditions of the Devonshire peasantry, as inhabitants of the gloomy recesses of Caverns, &c., and as of a race of beings 'invisibly small,' whose pursuits and pastimes have been . . . delineated by the Muse of Coleridge," &c.

N. & Q.—"The country people in this neighbourhood [Launceston, Cornwall. W. P.] sometimes put a prayer book under a child's pillow as a charm to keep away the *piskies*." 1st S.ii.475.

Halliwell—"PIXY. A fairy. The term is not obsolete, and, like *fairy*, is common in composition. *Pixy-puff*, a broad species of fungus. *Pixy-rings*, the fairy circles. *Pixy-seats*, the entangled knots in horses' manes. *Pixy-stool*, the toadstool. '*Pixie-led*, to be in a maze, to be bewilder'd, as if led out of the way by hobgoblin, or puck, or one of the fairies; the cure is to turn one of your garments the inside outward, which gives a person time to recollect himself; the way to prevent it, some say, is for a woman to turn her cap inside outward, that the *pyxies* may have no power over her, and for a man to do the same with some of his clothes.' *MS. Devon. Gl.*

'Thee *pixie-led* in Popish piety,
Who makes thyself the triple crown's base drudge.'

Clobery's Divine Glimpses, 1659, p. 73.

PIGSNIE. A term of endearment, generally to a young girl. See the *Tales of the Mad Men of Gotham*, p. 19.

'And here you may see I have
Even such another,
Squeaking, gibbering, of every degree.
The player fooles dear darling *pigsnie*
He calls himself his brother,
Come of the very same familie.'

Tarlton's Horse-loads of Fooles.

PIX. To glean orchards. *West.*"

Grose—"PIXY. A fairy. *Exm.*"

[The belief in PISKIES, and in being PISKY-LED, may be said still to linger in East Cornwall. I knew a party of sailors, all natives of Looe, who, having, as they stated, lost their way whilst crossing a field between Polperro and Looe, and being unable to find an outlet, though they had "walked round and round," simply turned their pockets inside out, and at once found themselves at the gate which they had previously been seeking in vain. And a servant girl, a native of Liskeard, in East Cornwall, who lived in my family, stated that she and several other girls were once unable to find their way, when they all turned their shawls and at once "zeed the gate stright ahead." "Laughing like a *pisky*" was a common description about Looe, in my boyhood, for any person laughing much.

It is, perhaps, worthy of remark that our south-western names for fairies, exhibited in the foregoing quotations from authors resident in Devon, Somerset, and Cornwall, divide themselves into two groups, of which *Piksy* and *Pisky* may be said to be the typical forms; the former including *Picksy*, *Pigsnye*, *Pixie*, *Pixy*, and *Pexy*; and the latter, *Pisgy*, *Piskie*, and *Piskey*. These types, it may be observed, differ only in the order in which the letters *k* and *s* stand, *Piksy* being converted into *Pisky* by the simple transposition of the letters in question. It may be noteworthy also that, whilst every Cornish author adheres to *Pisky* and its allies, the Devonshire and Somersetshire writers are as faithful to *Piksy*, with the exception of Mrs. Bray, who seems indifferently to use either type, and Dr. Wolcot, who uses the Cornish *pisky*. These exceptions are probably accounted for by the facts that Mrs. Bray, by dwelling on the border of the two counties, just as often heard one name as the other, especially as Cornish miners were somewhat numerous about Tavistock; and that though Dr. Wolcot was born at Kingsbridge, he completed his education at Liskeard and Bodmin, in Cornwall; was apprenticed to his uncle, a surgeon, at Fowey, in the same county; and for some time practised as a medical man at Truro. W. P.]

201. "PLANSH" is used as a name for any kind of floor about Ashburton (where, however, the floors are commonly of lime-ash), and "PLANSHING" for the ceiling of *planks*.

"PLANCHING" is used about Torquay as a name for a floor, whether of wood, or stone, or any other material.

Palmer—"PLANCHING. Floor."

Rock—"PLAUNCHING. Wooden floor; planking." "The *plaunching* is like a gliddered pond." p. 10.

Pulman—"PLANCHE. A wooden floor. Perhaps from plank—a floor made of planks."

Williams—"PLANCH. A wooden floor." "PLANCHANT (adj)."

Barnes—"PLANCED [Fr. *plancher*]. Boarded."

["PLANCHING," a wooden floor, and "PLANCED FLOOR," a floor of wood, are used about Looe. W. P.]

Couch—"PLANCHIN. A wooden or planked floor.

'And to that vineyard was a *planced* gate.'

Measure for Measure," [iv. 1. W. P.]

Forfar—"Nothen but gas-lights, and people, and gowld, From the *planchen* right up to the ruf."—*Exhib.* p. 5.

Hemwood—"Eh thraw'd en pon ta *planshen*, an' challeng'd to fight." *Conference*, p. 32.

Sandys—"PLANCHING. Planced; planks; boards; wooden floor. French, *plancher*. Shakespere mentions 'a *planced* gate,' in *Measure for Measure*. *Plankan* (Cornish), a plank."

Carew—"To cover their *planchings* with earth." p. 53. "The *planching's* rotten." p. 138. [The first of the quotations from Mr. Carew apparently indicates that in Cornwall, as about Torquay, *Planching* meant a floor of any kind, as the Cornish would not be likely to cover a wooden floor with earth. W. P.]

Halliwell—"PLANCED. Boarded. *Dorset*. It is also an archaism. PLANCHEN-boards. *Devon*. 'Plancher made of bordes, *planché*.' *Palsgrave*. Forby has *plancher*, a boarded floor; and Palmer gives *planches*, the planks of a flooring. 'The good-wife, that before had provided for afterclaps, had found out a privie place between two seelings of a *planncher*, and there she thrust Lionello, and her husband came sweting. "What news," quoth shee, "drives you home againe so soone, husband?" "Marrye, sweet wife," quoth he, "a fearfull dreame that I had this night which came to my remembrance."' *Tarlton's Neves out of Purgatorie*, p. 100."

Groce—"PLANCHING. A wooden floor. *Devonsh.*" "PLANSHER, or PLANCHER. The chamber floor. *Norfol.*"

Browne—"The prince an hundred pound hath sent To mend the leads and *planchens* wrent." p. 11.

202. *Walker*—"PLASH. A small lake or puddle of water." "PLASHY. Watery; filled with puddles."

Perry—"PLASH. A small puddle of water." "PLASHY. Watery; filled with puddles."

Bray (quoting Browne)—

"Through the quagmires and red water *plashes*
The boyes run dabbling." iii. 20.

Palmer—"PLASHET. Quagmire."

["PLASHET" is used about Looe; and not far from that town there is a hamlet called PLASHFORD, answering well to Dr. Bannister's definition—"The ford at the swamp." W. P.]

Couch—"PLASHET. A moist place where a brook begins."

Garland—"PLOSH. Puddle; quagmire."

Bannister—"PLASH. Puddle; pool; swamp; bog; marsh. PLASH-CROFT. Swampy croft. PLASH-FORD. Ford at the swamp. PLASH TOWN. Muddy town-place [field]."

Carew—"Almost euerie hedge serveth for a Roade, an euerie *plashoote* for Springles to take them." pp. 24-5. "Thorow bushes, briers, mires, *plashes*, and riuers whatsoever." p. 74.

Burns—"Plashy sleetes and beating rain."

Jockey's Ta'en the Parting Kiss, st. 2.

Halliwell—"PLASH. A pool of water; a large puddle. 'Lacuna, a playche of water.' *Nominale MS.*

'Betwyx a *plasche* and a flode appone a slate lawnde.'

Morte Arthure, MS. Lincoln, f. 83.

'Roares, rages, foames, against a mountain dashes,
And in recoile makes meadowes standing *plashes*.'

Browne's Britannia's Pastorals, p. 53.

'If thu drynke the halfe, thu shalt fynde it no scoff:
Of terryble deathe thu wylt stacker in the *plashes*.'

Bale's Kyng Johan, p. 78.

'At length coming to a broad *plash* of water and mud, which could not be avoyded, I fetcht a rise, yet fell in over the ankles at the further end.' *Kemp's Nine Daies' Wonder*, 1600." "PLASHY. '*Plashy* waies, wet under foot; to *plash* in the dirt, all *plash'd*, made wet and dirty; to *plash* a traveller, to dash or strike up the dirt upon him.' *MS. Lansd.*, 1033. 'A wet or *plashie* ground.' *Nomenclator*, 1585, p. 382."

Prince—"She was stopt by a *plashy* place." p. 668.

Shakspeare—

"As he that leaves

A shallow *plash*, to plunge him in the deep."

Tem. Shr. i. 1.

Spenser—"Out of the wound the red blood flow'd fresh,
That underneath his feet soon made a purple *plash*."

Faerie Queem, b. ii. c. viii. a. 36.

203. "PLIMMED" is used about Ashburton and Torquay.

Palmer—"PLIMED. Swelled."

Lock—"PLIM. To swell up as new bacon, &c., in dressing."

Pulman—"PLIM. To swell."

Jennings—"PLIM. To swell; to increase in bulk."

Williams—"PLIM, PLUM. To swell; to increase in bulk as soaked peas or rice."

Barnes—"PLIM. To swell or expand. 'This biacon da *plim* in bwilen.'"

Halliwell—"PLIM. To fill; to swell. *Var. dial.* As an adjective, stout and fat."

Grose—"PLIM. To *plim*; to swell; to increase in bulk; as, 'this bacon will *plim* in the pot.' Also to make anything swell by beating. *Exam.*"

204. "PLOUGH," a team of oxen, is used about Ashburton and Torquay.

Pulman—"PLOUGH. In addition to the well-known agricultural implement, the farm waggon and horses are often included under the general term of *plough*. 'Farmer Smith got a cappical *plough*'—meaning that his waggons and teams are excellent. The plough, properly so called, is commonly known as the *zull*—from the Anglo-Saxon *syl*."

Jennings—"PLOUGH. The cattle or horses used for ploughing; also a waggon and horses or oxen."

Williams—"PLOUGH. A team of horses; also a waggon and horses, or a waggon and oxen."

Halliwell—"PLOUGH. Used for oxen kept to draw the plough, not for horses."

Grose—"PLOUGH. A waggon."

205. "PLUM" is used about Ashburton and Torquay.

Lake—"PLUMB. A combination of softness and elasticity."

Palmer—"PLUM. Light."

Rock—"PLUM. Light; soft; springy; puffy. *Ex.* 'plum soil; plum bed.'" "*Plum* be tha zoil a-tap their breast." p. 28.

Pulman—"PLUM. Full; round; light; soft; springy."

Moore—"PLUM. Light and puffy, as 'plum soil.'"

Williams—"PLUM. Plim."

["PLUM" is used about Looe, where dough, in which yeast has produced its due effect, is said to be *plum*. W. P.]

Couch—"PLUM. Soft. Dough is said to *plum*."

Daniel—"Plum as feathers." *Thalia*, p. 37. [Nothing can give a better idea of *plumness* than the softness, lightness, and elasticity of feathers; in short, of *plumage*. W. P.]

Garland—"PLUMMING. Raising dough with yeast. A farmer near the Lizard, who was confined to his bed by illness, and complained of a distention of his stomach, heard to his

great horror that a pitcher of yeast had been accidentally upset in the well from which he was supplied with water. 'Then,' he cried out, 'that explains my complaint—I'm *plumming*.'"

N. & Q.—"Surely it [PLUM. W. P.] is the same word as *plump*, though employed in a somewhat different sense. *Plum* or *plump*, as applied to a bed, would certainly convey the idea of softness or downiness. As to the employment of the word as a verb, I conceive that it is analogous to an expression which I have often heard used by cooks, . . . 'to *plump* up.' 1st S. viii. 654.

Halliwell—"PLUM. Light; soft. *West*."

Grose—"PLUM. Very. '*Plum*, pleasant;' very pleasant. *Kent*."

206. "POOK" is used about Ashburton and Torquay.

Baird—"Bit zom time back, ha'd got a mow;
Es vokes id bin thare aul tha day,
Along way hee, a making hay;
And Roger thort, ta git et vore,
Ha'd stay an *put* up zummat moar." ii. 45.

Lock—"POOK. A haycock, *quasi* *peake* or *cona*."

Pulman—"POOK. A haycock."

Williams—"POOK. A cock of hay."

Barnes—"Haymaking consists of several operations which, with fine weather, commonly follow each other in Dorsetshire, thus: The mown grass—in *zwoath*—is thrown abroad—*tedd*ed—and afterwards turned once or twice; and in the evening raked up into little ridges,—*rollers*—single or double as may be formed by one raker or by two raking against each other; and sometimes put up into small cones or heaps, called *cocks*. On the following morning the rollers or cocks are thrown abroad into *passels*—parcels—which, after being turned, are in the evening put into large ridges—*wiales*,—and the wales are sometimes *pooked*, put up into larger cones—*pooks*,—in which the hay is loaded. For raking grass into double rollers, or pushing hay up into wiales, the fore raker or pickman is said to *riake* in or *push* in, and the other to *cluse*."

["POOK" is used about Looe. W. P.]

Daniel—"At stons, an' mots, and *pooks* we'll loff." *Companion*, p. 25.

Tregellas—"POOK. Rick." "Find the *pooks* of turves." *Tales*, p. 185.

Halliwell—"POOK. A cock of hay. *Somerset*. To *pook* hay or barley, to make it up into cocks."

207. "POSSES" is used about Ashburton and Torquay.

Pulman—"PAUSTEES. Posts."

Garland—"POSS. Gate post."

Halliwell—"POSTISIS. Posts. *Var. dial.*"

Groce—"POSTISIS. Posts; plural of post. *Middl.*"

208. "POTS" is used about Ashburton and Torquay.

Vancouver—"For the carriage of stones, gravel, and dung, strong wicker baskets, opening at bottom, and sufficient to contain one hundred weight and a half of short or rotten dung each, are generally used." pp. 127-8.

["POTS" is used about Looe. W. P.]

Groce—"POT-DUNG. Farm-yard dung. *Berksh.*"

209. "POT-WATER" is used about Ashburton.

Halliwell—"POT-WATER. Water used for household purposes, for cooking, &c. *Devon.*"

210. "POUNDING" and "POUND HOUSE" are used about Ashburton and Torquay.

Pulman—"POUN' HOUSE. Pound-house. Perhaps from the French *pomme*, an apple. . . . The place where the cider press is fixed and cider is made."

Williams—"POUND-HOUSE. House for cider-making."

["POUND," "POUND-HOUSE," and "POUNDING" were used about Looe, where the apples were *pounded*, i.e. reduced to pulp, either by grinding them in a mill, or by crushing them in a granite trough under a large granite roller or wheel—the two making the *pound*. W. P.]

[Since writing the foregoing, I have seen an old disabled granite *pound*, such as is mentioned above, on the premises of Mr. Paige-Brown, Great Englebourne, Harberton, South Devon. W. P.]

Halliwell—"POUND. A cyder mill. *Devon.*"

211. "POWER" is used about Ashburton and Torquay.

Bowring—"Power of money." [= A great deal of money. W. P.] *Trans. Devon. Assoc.*, 1866, p. 36.

Wolcot—"And hang'th a *power* of thieves." *Mid. Elect.*

Palmer—"POWER. A great number."

Rock—"POWER OF. Much; many." "I've zeed a *power* o' nice young wimmen." p. 11.

Jennings—"A *power* of rain. A great deal of rain."

["POWER" = a great number or quantity is used about Looe. W. P.]

Garland—"POWERS. A large quantity."

Higham—"Aafter *powers* of rigs and traade we got to Bristol." *Exhib.* p. 67.

Sandys—"POWERS. A great number."

N. & Q.—"I have been often struck with the fact, how purely of classical derivation are many of the expressions in daily use amongst our country people. Take, for a single instance, the word *power*, signifying *quantity* or *number*. Nothing is more common than to hear one person say of another, that he has a *power* of money, or a *power* of friends, or a *power* of hands = workmen, which is simply synonymous with the peculiar use of *vis* in Latin, and *δύναμις* in Greek. Thus in Cicero we find '*vis auri*,' '*vis innumerabilis servorum*;' in Horace, '*vis hederæ*;' in Virgil, '*canum vis*;' in Juvenal, '*verborum tanta vis*;' in Livy, '*vis navium*;' in Tacitus, '*vis locustarum*;' and, as its Greek equivalent, we have in Herodotus *κοίην δὲ χρημάτων δύναμις*; and in Thucydides, *ἀρ' ἀλίγη δύναμειος χρημάτων*." 4th S. ii. 199.

212. "PUCKER" is used about Ashburton and Torquay.

Palmer—"PUCKER. Fuss."

["PUCKER" is used about Looe. W. P.]

Parish—"PUCKER. A fuss; over anxiety, with a little touch of ill temper."

Halliwell—"PUCKER. Confusion; bother; perplexity; fright; bustle. *Var. dial.*"

213. *Perry*—"QUAIL. To languish."

"QUAILING" is used about Ashburton, and "QUEELING" about Torquay.

Palmer—"QUAILING. Fainting; being depressed."

Rock—"QUAIL, QUEEL. To faint away." "Ur look'th as if her'd *quail*." p. 26.

[To "QUAIL-AWAY" is to faint, about Looe. W. P.]

Halliwell—"QUAIL. Sometimes, to faint; to droop; to fall sick."

Prince (quoting an epitaph in Ottery St. Mary Church)—

"This fading flower on earth

Might yet *unquailed* have flourished a while." p. 483.

214. "QUARREL" is used about Ashburton and Torquay.

Bowring—"QUARREL. Pane of glass." *Trans. Devon. Assoc.*, 1866. p. 27.

Palmer—"QUARRILS. Panes."

Rock—"QUARREL. A square of window-glass (*qy.* a squarel)."

Pulman—"QUARL. A pane of glass. Literally, perhaps, a diamond-shaped pane only—from *Quarrel*, the old name of a cross-bow arrow, the head of which was diamond-shaped. Perhaps from the French *quarré*, obtained through the Anglo-Norman."

Jennings—"QUARRELS [*Quarré*, French]. A square of window glass."

Williams—"QUARREL, QUAREY. A pane of glass."

Barnes—"QUARREL (French *Quarré*). A window pane."

["QUARREL," and "QUARL," are used about Looe. W. P.]

Couch—"QUARREL. A pane of glass. Probably at first a square of glass."

T. Q. Couch—"QUARREL. A pane of glass. Probably at first a small square of glass."

'Some asked how pearls did grow, and where ;

Then spoke I to my girl

To part her lips, and show me there

The *quarrelets* of pearl.'—*Herrick*."

Garland—"QUARRY. A pane of glass."

Cooke—"QUARREL. A square of window-glass."

Halliwell—"QUARREL. A square of window glass, properly one placed diagonally. Anciently, a diamond-shaped pane of glass. Hence the cant term *quarrel-picker*, a glazier. The word was applied to several articles of a square shape, and is still in use."

215. *Palmer*—"QUELSTERING. Hot."

Lock—"QUELSTRING. Hot and sultry."

Halliwell—"QUELTRING. Sultry ; sweltering. *West*."

Grose—"QUELTRING. Hot ; sultry ; sweltring. *Exm*."

216. "RAKED-UP" is used about Torquay.

Palmer—"RAKED. Rose up in a hurry." "RAKED UP. Awoke from sleep."

Lock—"Ad ! thoa es *rakad up* and tuck en be tha collar." p. 20.

Williams—"RAKE. To rouse up."

Halliwell—"RAKE. To rouse up. *Somerset*. To start up suddenly. *West*."

217. *Palmer*—"RARE. Early."

Halliwell—"RARE. Early. *Devon*."

218. *Walker, Perry*—"RASH. Violent ; precipitate ; hasty."

"RASH" is used about Ashburton and Torquay.

Halliwel—"RASH. To snatch, or seize; to tear, or rend."

Milton—"Beauty, like the fair Hesperian tree
Laden with blooming gold, had need the guard
Of dragon-watch with unenchanted eye,
To save her blossoms and defend her fruit
From the *rash* hand of bold incontinence."—*Comus*.

Shakspeare—"Make not too *rash* a trial of him, for
He's gentle and not fearful."—*Temp.* i. 2.

219. "RAW-CREAM" and RAW-MILK are used about Ashburton and Torquay.

Pulman—"RAW-MILK. Milk not separated from its cream."

Vancouver—"The milk is put into tin or earthen pans, holding about ten or twelve quarts each. The evening's meal is placed in the following morning, and the morning's milk is placed in the afternoon, upon a broad iron plate, heated by a small furnace, or otherwise over stoves, where, exposed to a gentle fire, they remain until after the whole body of cream is supposed to have formed upon the surface, which being gently removed by the edge of a spoon or ladle, small air bubbles will begin to rise, that denote the approach of a boiling heat, when the pans must be removed from off the heated plate or stones. The cream remains upon the milk in this state until quite cold, when it may be removed into a churn, or, as is more frequently the case, into an open vessel, and there moved by hand with a stick about a foot long, at the end of which is fixed a sort of peal, from four to six inches in diameter, and with which about 12 lbs. of butter may be separated from the butter milk at a time. The butter in both cases being found to separate much more freely, and sooner to coagulate into a mass, than in the ordinary way, when churned from *raw cream* that may have been several days in gathering; and at the same time will answer a more valuable purpose for preserving, which should be first salted in the usual way; then placed in convenient-sized earthenware crocks, and always kept covered with a pickle made strong enough to float and buoy up, about half out of the brine, a new-laid egg. This cream, before churning, is the clouted cream so celebrated in Devonshire." pp. 214-15.

Barnes—"RAMMIL. Rawmilk; applied to cheese made of *raw* unskimmed milk."

["RAW-CREAM" (more frequently "RAW-REAM") and "RAW-MILK," are used about Looe. W. P.]

Tregellas—"Hot buttered cakes, and toast, and shuggar, and *raw-milk*, and every thing else." *Tales*, p. 32.

N. & Q.—"In Dorsetshire milk from which the cream has

not been taken is called '*rammil*' or '*rammilk*,' and the cheese made with it is called '*rammilk* cheese,' in contradistinction to skim-milk cheese. The word is sometimes written and pronounced '*rawmilk*,' but I believe this conveys a false impression. The Ang. Sax. word for cream is *ream*, *rem*; the Ger. *rahm*; Old Ger. *ruum*; Icl. *riomi*. And I think that '*rammilk*' is *rahm* milk—*i.e.* cream milk and not raw milk." 4th S. viii. 415. "Unskimmed milk is in Lancashire '*ream* milk,' evidently a cognate word [to *rammilk*. W. P.]. I always supposed it a corruption of 'cream.'" *Ibid*, 485. "Raw produce of any kind is an article in its natural or crude state. Now new milk is in its natural state, and hence '*raw milk*.' . . . '*Raemilk*' and '*rammilk*' are synonymous, whilst 'cream-milk' or '*ream-milk*' is an article of a later stage." *Ibid*, p. 486. "The word *rammilk* is only used in districts where Anglo-Saxon lingers, hence a strong inference that it is derived from Anglo-Saxon. If the derivation were *raw* milk, the word would be used and known in other counties." 4th S. ix. 85.

220. "REAM" is used about Torquay.

["REAM" is used about Looe. W. P.]

Burns—"The nappy reeks wi' mantling *ream*,
And sheds a heart-inspiring steam."

The Two Dogs, lines 131-2.

"Richly brown, *ream* o'er the brink,
In glorious faem."—*Scotch Drink*, st. 2.

Grose—"REAM-KIT. A cream-pot. *North*."

221. "REAMED" is used about Ashburton and Torquay. [I had been accustomed to hear it said that India-rubber when stretched was *reamed*, that a tight shoe when stretched had been *reamed*, and so on; but during 1875, a retired Torquay tradesman, describing an artesian boring then in progress in that town, told me that they had been making a three-inch bore, but were about to *ream* it by using a six-inch bore. W. P.]

Baird—"Zo es thort et wis time vur ta cut hom ta baid,
Ware es *raimid*, and tossid, and kick'd up an down." i. 31.

Palmer—"REAMED. Stretched."

Rock—"RAME. To stretch out the person." "RAMES. A stretched-out or lean person."

Pulman—"REAMY (A.S. *Ream*, a film). Stringy; thick; coagulated. Applied to cider or ale when kept so long as to become thick like oil."

Jennings—"REAM. To widen; to open." "REAMER. An instrument used to make a hole larger."

Williams—"REAM. To widen; to open; to stretch. An instrument or tool for widening a hole (generally used for metals); to bear stretching." "REAMY. Adj."

Barnes—"REAMY (A.S. *Ream*, a film). Filmy or stringy; spoken of slack bread."

["REAMING" is used about Looe to denote stretching. W. P.]

Couch—"REAM. To stretch. (From *ryman*, to extend.) It is also used as a noun, meaning the rim or surface."

Daniel—"Us seed sitch ships, they *raimed* for miles." *Motley*, p. 37. [This is put into the mouth of a native of Cornwall, where I never heard *us* used in the nominative case; but perhaps Mr. Daniel intended to convey the idea that as his heroine was residing at Plymouth, she had fallen into the Devonshire habit of using the pronoun in this way. W. P.]

Thoresby—"RAUME. To reach." *Eng. Dial. Soc.* B. 17.

Hutton—"REAM. To reach with stretched-out body and arms." *Eng. Dial. Soc.* B. 1. [This would be to *ream* about Looe also. W. P.]

Willan—"RAME, REAM. To reach or stretch after." *Ibid.* B. 7.

Ray, N.—"RAME. To reach; perchance from *rome* [No; cf. Icel. *hremma*, to clutch]." "REAM. To stretch out the hand to take anything; to reach after. *Hickes*.—*Ray's Pref.* p. 5, l. 3." *Ibid.* B. 15.

Halliwell—"REAM. To stretch out; to bear stretching or drawing out; to draw out into thongs, threads, or filaments. Also to widen a hole, especially in metal. Bread is said to *ream* when made of heated or melted corn. REAMER. An instrument used to make a hole larger."

Grose—"REAM. To ream; to stretch. *Exm.*"

222. "RED-HAY" is used about Ashburton and Torquay.

Halliwell—"RED-HAY. Mowburnt hay, in distinction to *green hay*, or hay which has taken a moderate heat, and *rinny*, or mouldy hay. *Devon.*"

223. "REED" is used about Ashburton and Torquay.

Pulman—"REED. Unbruised straw for thatching." "REED-MOTE. A pipe of straw."

[Mr. Pulman's "*Reedmote*, a pipe of straw," is about Looe called a *Straw-mote*, or, to follow the local pronunciation, a *strummut*. W. P.]

Moore—"REED. Unbound straw of wheat."

Jennings—"REED. Wheat straw prepared for thatching."

Williams—"REED. Wheat straw prepared for thatching (W. of Parret)."

["REED" is used about Looe. W. P.]

Halliwell—"REED. Unbruised straw. *West.* Hence to reed or thatch a house. REED-BILLY. A bundle of reed. *West.* REEDHOLDER. A thatcher's bow fastened to the roof to hold the straw. *West.* REED MOTE. A pin or point used to point at the letters, in teaching children to read. *Florio.* REED-RONDS. Plots or beds of reed; or the swamp which reeds grow in. *Norf.* Forby has *reed-roll*."

224. *Lock*—"ROW CAST (*i.e.* to Rough-cast). To throw dirt that will stick."

King—"The two Cornish mountains, Brown Willy and Roughtor, pronounced *Rowtor*." p. 309.

Moore—"ROO. Rough."

Barnes—"ROUGH-CAST, or ROÜ-CAST. To cover walls, particularly mud walls, with *rough-cast*, a composition of sand, mortar, grit, &c."

["ROW" (pronounced to rhyme with *now*) is used about Looe: thus *Row-tor* = *Rough-tor*, and *Row-hound* = *Rough-hound*. *Rough-cast* (not *Row-cast* or *Roo-cast*) is used about Looe, as well as about Ashburton and Torquay. W. P.]

Couch—"ROW. Rough. The fish *Squalus cunicula* is called *Row-hound*."

Garland—"ROW-CAST. A compost of lime and pebbles."

Bannister—"ROWLAND. Rough land or field." "ROWLY. Rough pasture (*lea* Teutonic)." "ROW-PARK, ROW-POCK. Rough close." "ROW-TOR, ROUGH-TOR. Rough (*huero*) hill."

Halliwell—"ROO. Rough. *Devon.*"

Grose—"ROW-CAST, *i.e.* to rough-cast; to throw dirt that will stick. *West.*"

225. *Lock*—"RORY TORY. Tawdry."

Pulman—"RORY-TORY. Gay; flaunting; dressed in many colours."

226. "ROUSE" (to rhyme with *house*) is used about Ashburton and Torquay.

Palmer—"ROUSE. With a great noise."

Pulman—"ROWCE. To fall with a great noise."

Williams—"ROWSSE. To rush out with a great noise."

["ROUSE" is used about Looe. W. P.]

Hallivell—"ROUSE. Noise; intemperate mirth."

Shakspeare—"The great cannon to the clouds shall tell;
And the king's rouse the heavens shall bruit again."
Ham. i. 2.

"The king doth wake to-night, and takes his rouse."
Ibid., i. 4.

"O'ertook in his rouse."—*Ibid.*, ii. 1.

227. "RUFF" is used about Ashburton and Torquay.

Wolcot—"Prayers over, now he spied the ruff." *Roy. V. &.*

Pulman—"RUFF. Roof."

Jennings—"RUF. A roof."

Barnes—"RUF. (A.S. *Hrof*.) A roof."

["RUFF" is used about Looe for the *Roof* of a house and the *Roof* of the mouth. W. P.]

Forfar—"From the planchen right up to the ruf." *Exhib.*
p. 5.

Gervis—"The church, the tower,
The wael, the ruff, and tombstoanes without end."
Ballads, p. 27.

Hallivell—"RUFF. A roof. *Var. dial.*"

229. "SCAD" and "SCUD" are used about Torquay.

Bowring—"When Haldown has a hat,
Let Kentown beware a skatt."

Trans. Devon. Assoc., 1866, p. 37.

Palmer—"SCUD. Shower." "'When Haldon has a *slat*,
Kenton beware of a *scat*.' Haldon is a hill near Exeter, and
Kenton a place not far from it. The proverb means, that when
the hill has its head enveloped in the clouds, the neighbour-
hood may soon expect a shower."

Lock—"SCATT, or SKATT. A shower of rain. There is a
proverb at Kenton, in Devon, mentioned by Risdon, 'When
Halldown has a hat, let Kenton beware of *scatt*.' See *Brice's*
Topog. Dict. Art. Kenton."

Pulman—"SCUD, SKAD. A slight shower of rain. 'Tis
only a bit of a *scud*.'"

Jennings—"SCAD. A short shower."

Williams—"SCAD. A sudden brief shower."

Barnes—"SCUD (A.S. *Scad*, a shadow?). A short, slight
shower from a flying cloud; a passing shower as it were."

Grose—"SCATT, or SKATT. A shower of rain. *West*. There
is a proverb at Kenton in Devonshire, mentioned by Risdon,

'When Halldown has a hat,
Let Kenton beware of a *Skatt*.'

See *Brice's Top. Dict. Art. Kenton*."

"SCATTY-WEATHER. Showery, with little *skuds* of rain. *West.*"

Falconer—"The blackening ocean curls, the winds arise,
And the dark *scud* in quick succession flies."

Shipwreck, lines 129-130.

"*Scud* is a name given by seamen to the lowest clouds, which are driven with great rapidity along the atmosphere, in squally or tempestuous weather." *Ibid.* Note.

230. *Bray*—"We are celebrated, like most parts of Devon, for the excellence of that luxury, our *scalded* or clouted cream." ii. 3.

"SCALD-CREAM" is used about Ashburton and Torquay.

Vancouver—"The calf is suckled twice a day by hand, with two quarts of new milk and one quart of *scalded* milk." p. 331.

["SCALD-CREAM" and "SCALD-MILK" are used about Looe. W. P.]

Fox—"A clom buzza of *scale melk* about on the scoans." *Dolly*, p. 44. [= A coarse earthenware pot of *scald-milk* about on the pavement. W. P.]

Sandys—"SCAAL or SCAALD CREAM or MILK. *Scal'd cream* is the celebrated clouted cream. *Scal'd milk* is the milk after the cream has been taken from it."

Halliwell—"SCALD-CREAM. Cream raised by heat. *West.*"

231. "SCOVY" is used about Ashburton and Torquay.

Bowring—"SUENT and SCOVY, admirable designations of what is smooth and regular, and of the contrary." *Trans. Devon Assoc.*, 1866, p. 15.

["SCOVY" is used about Looe.]

Couch—"SCOVY. Spotted; mottled."

Halliwell—"SCOVY. Uneven. *Devon.* 'Scovy wool, wool of various colours, not duely mixt in combing or scribbling, but streaky.' *MS. Devonshire Glossary.*"

232. "SCRIMMAGE" is used about Ashburton.

["SCRIMMAGE" is used about Looe. W. P.]

Sandys—"SKRIMMAGE. Bustle or confusion."

Halliwell—"SCRIMMAGE. A skirmish; but now used for a general row. *Var. Dial.*

'Prynce Ouffur at this *skrymage* for all his pryde

Fled full fast, and sowght no gyde.'

MS. Lansdowne 208, f. 10."

233. "SCRIMPING" is used about Ashburton and Torquay.

Palmer—"SCRIMP. Short."

Rock—"SCRIMP. To curtail." "SCRIMMET. Shrunk; shrivelled." "Old age don't *scrimp* one single bliss." p. 37.

Pulman—"SCRIMP. To begrudge; to curtail."

Daniel—"My jacket es a brave ould jacket—see,
An' net a mite too *skremp* vor thee."—*Thalia*, p. 44.

Parish—"SCRUMP [*Scrimmin*, Ang. Sax., to wither up]. Anything under sized. In Hampshire a small shrivelled apple is called a *scrumpling*." [About Looe such an apple would be called a *crumpling*. W. P.]

Willan—"SCRIMP. To spare; to scant; short; scanty." *Eng. Dial. Soc.* B. 7.

Gaskell—"He wunna spend much, . . . and I'll *scrimp* and save in the house to make it good." *Branch*, p. 460.

Burns—"That auld, capricious carlin, Nature,
To make amends for *scrimpit* stature,
She's turned you aff, a human creature
On her first plan,
And in her freaks, on every feature
She's wrote the man."—*To James Smith*, st. 3.

"Down flow'd her robe, a tartan sheen,
Till half a leg was *scrimply* seen."—*The Vision*, st. 11.

"For lack o' thee I *scrimp* my glass."

Lines written on a Bank Note.

Halliwell—"SCRIMP. To spare; to pinch. *Var. dial.* Hence *Scrimption*, a small pittance."

234. *Walker*—"SCUTAGE. Shield money. A tax formerly granted to the king for an expedition to the Holy Land."

"SCUTE" is used about Ashburton.

Halliwell—"SCUTE. A *scute* was declared to be worth half a noble by a proclamation of Henry V., printed in Hall, f. 37. 'Scute, a present of money.' *Devonshire Glossary*."

235. "SEAM" is used about Ashburton for a *horse-load*, and about Torquay for a *load*.

Pulman—"SEAM. Three cwt. of hay, or cwt. of straw."

Vancouver—"Fifty faggots or five *seams*." p. 231.

Williams—"SEAM. A horse-load (A.S. *seam*)."

["SEAM" is used about Looe as a name for a load merely, not for a definite quantity. W. P.]

Couch—"SEAM, or ZEAM. A load of hay, manure, &c. It means with us now no definite quantity, but is applied to a cart-load, waggon-load, &c. Tusser, speaking of the good crops of barley which he raised at Brantham, says, 'Five

seams of an acre I truly was paid.' Again, 'Th' encrease of a *seam* is a bushel for store."

Garland—"SEAM. A quantity of clay (about a cart load)."

Parish—"SEAM [*Seam*, Ang. Sax]. Eight bushels, or a horse load."

Ray, S. & E.—"SEAM. 'A *seame* of corn, of any sort,' a quarter, eight bushels. *Ess.* ab. A.S. *seám*, et hoc fortè à Græco, a load, a burthen, a horse-load. It seems also to have signified the quantity of eight bushels, being often taken in that sense in Matth. Paris.—*Somner*. 'A *seam* of wood,' an horse-load. *Suss.*" *Eng. Dial. Soc.* B. 16.

N. & Q.—"SEAM of straw, 2 cwt. Hay and straw are commonly sold by the *seam* in Devonshire, and not by the cwt. or ton, as elsewhere." 4th S. vii. 429. "*Seam* (of hay or straw), from the French *somme*; Lat. *summa* for *sauma*, *saugma*, *sagma*, σάγμα, from σάρτω, to load. In Essex a seam of corn is eight bushels. Blount renders *summa avenæ*, 'a seam or horse-load of oats.'" *Ibid*, 506.

Hallivell—"SEAM. A horse-load of wood. Ray gives this as a Sussex word, but it seems to have fallen out of use in that county. See, however, *Marshall's Rural Economy of the West of England*, i. 398, who gives it as a West Devonshire word."

Grose—"SEAME OF CORN. Eight bushels, or a quarter. *South.*" "SEAME OF WOOD. A horse load. *South.*"

Browne—"One lyes there for a *seam* of malt." p. 11.

236. "SOLE" is used about Ashburton and Torquay as a name for a plough.

Rock—"ZOLE. A plough, or plough iron."

Lock—"ZAWL, or ZOWL (Sax. *sul* or *sulh*, aratrum; from *sulco*, *sulcare*, to cast up furrows). A plough." "SHOOL. Shovel."

Pulman—"SHULE. A shovel." "Zull (A.S. *syl*). A plough."

Moore—"SEWL, or ZULE. A plough."

Jennings—"ZULL. The instrument used for ploughing land; a plough."

Williams—"SULL. Plough share (A.S. *sul*)."

Barnes—"ZULL (A.S. *syl*). A plough. 'Nán man the his hand a-set on his *sulh*' 'No man who has set his hand on his plough.' *Luke* ix. 62."

Ray, S. E.—"SULL. A plough in rest. More's note, Ray (2)." *Eng. Dial. Soc.* B. 16.

Hallivell—"SHULL. A spade, or shovel. *North.*" "ZULL. A plough. *Exmoor.*"

238. *Bourring*—"The Shear-a-muze." *Trans. Devon. Assoc.* 1866, p. 18.

Parish—"SHEERE-MOUSE. A field mouse; a shrew-mouse. The country people have an idea that the harvest mouse is unable to cross a path which has been trod by man. Whenever it attempts to do so, it is said to be immediately struck dead. This accounts (they say) for the numbers which on a summer's evening may be found lying dead on the edge of the field foot-paths without any wound or apparent cause of death."

[The bat is called *Sheermouse* at Prawle in South Devon; *Leather-bird* at Stokenham (about five miles from Prawle), where *Sheermouse* is the name for the Dormouse; *Leather-bird* about Ashburton; *Reremous* in Dorsetshire, according to Barnes, who derives the word from the A.S. *Hræremus*; *Airy-mouse* about Looe, where, when a bat was seen, the boys, fifty years ago, were wont to shout—

"Airy-mouse, airy-mouse! fly over my head,
I'll give you a penny to make my bed."

Mr. Couch has "AIRY-MOUSE. The bat. A.S. *Hrære-mus*.

'To war with *rere-mice* for their leathern wings.'—*Shakspeare*.

The village boys address the bat, as it flits over their heads, in the following rhyme:—

'Airy-mouse, airy-mouse, fly over my head,
And you shall have a crust of bread;
And when I brew, and when I bake,
You shall have a piece of my wedding cake.'

The passage from *Shakspeare* quoted by Mr. Couch is, in Knight's Edition, "Some war with *rear-mice* for their leathern wings," and occurs in the speech of *Titania* in sc. 3, act ii., in *A Midsummer Night's Dream*.

Sherry mouse is the name of the Shrew, or Shrew mouse, about Torquay. W. P.]

239. "SHIPPEN" is used about Ashburton and Torquay.

Rock—"SHIPPEN. A cattle stall (*gy*. A sheep pen)."

Pulman—"SHIPPIN. (Sheep-pen?) A stall for cattle."

Moore—"SHIPPEN. An ox-house."

Bannister—"SHIPPEN PARK, SHIPPING PORT. Cow-house. (*Scipen*, Saxon.) Close (*parc*)."

Hutton—"SHIPPEN, SHEPPEN. A cow-house." *Eng. Dial. Soc.* B. 1.

Willan—"SHUPPEN. A cow-house." *Ibid*, B. 7.

Gaskell—"He went to the *shippon* the last thing at night."

Branch, p. 473. "Bessy would . . . attend to the cows and the *shippon*." *Ibid*, 474.

Ray, N.—"SHIPPEN. A cow-house; ab. A.S. *scypen*, stabulum, bovine, a stable, an ox stall." *Eng. Dial. Soc.* B. 15.

Halliwell—"SHIPPEN. A stall, stable, or shed. (A.S.) A cow-house is still so called. *North*.

'Whi is not thi table sett in thy cow-stalle,
And whi etist thou not in thy *shipun* as wele as in thin halle?'
MS. Digby, 41, f. 8."

Grose—"SHIPPEN. A cow-house; ab. A.S. *scypene*, stabulum, bovine, a stable, an ox stall." [Apparently copied from *Ray*, N. W. P.]

Chaucer—"For now the greatē charitie and prayērs
Of limiters and other holy freres,
That searchen every land and every stream,
As thick as motēs in the sunnē beam,
Blessing halls, chambers, kitchens, and bowers,
Cities and burghs, castles high and towers,
Thorpēs and barnēs, *shepens* and dairies,
This maketh that there be no faeries."
Wife of Bath's Tale, lines 6447-6454.

240. "SIGHT" is used about Ashburton and Torquay.

Bowring—"A sight of people." *Trans. Devon. Assoc.*, 1866, p. 36.

Wilkey—"I zeed a *sight* o' cruel purty crayters." p. 11.

Pulman—"SIGHT. A great number or quantity. 'An' there was sitch a *sight* of voke."

Barnes—"SIGHT. 'Sich a *sight* o' voke,' or anything else, means such a number or quantity."

["SIGHT" is used about Looe. W. P.]

Garland—"SIGHT. A large quantity. 'A *sight* of ore; a *sight* of fish.'"

Tregellas—"SIGHT. A great quantity." "They wor doin' a *sight* better work than I cud ever do." *Peeps*, p. 40.

Halliwell—"SIGHT. A great quantity. *Var. dial.* 'Where is so huge a *syght* of mony.' *Palgrave's Acolastus*, 1540."

241. "SKIRTING" is used about Ashburton and Torquay.

Halliwell—"SKIRTING. A sort of half-ploughing, preparatory to beat burning. *Devon*."

242. "SKIVER" is used about Ashburton and Torquay.

Pulman—"SKIVER. A skewer. Query, corrupted from a 'securer'? It is made out of 'Skiver 'ood'—that is, dog-wood (*Cornus sanguinea*)."

Jennings—"SKEW, SKIVER. To skewer." "SKIVER. A skewer."

Barnes—"SKIVER. A skewer. *Skivver*-wood. *Cornus sanguinea*, of which skewers are made."

["SKIVER" and "SKEVVER" are used about Looe, where *dogwood*, of which skewers are made, is termed *skiver-tember*. W. P.]

Daniel—"For they got bagganets up here,
Wud *skivor* ivery wane, my dear."—*One and All*, p. 37.

"That *skovers* the fust man."—*Ibid*, p. 41.

Tregellas—"SKIVVER. Skewer."

Parish—"SKIVEL. A skewer. In the west, *dogwood*, of which skewers are made, is called *skiver-wood*."

Halliwell—"SKIVER. A skewer. *Skiver-wood*, *dogwood*, of which skewers are made. *West*."

243. "SKAWVE" is used about Ashburton, and "SKOVE" about Torquay.

Halliwell—"SKOVE. A sheaf of corn. *West*."

244 "STRAMMED" is used about Ashburton, and "SLAMMED" as well as "STRAMMED" about Torquay.

Bowring—"STRAM. To bang." *Trans. Devon. Assoc.*, 1866, p. 27.

Wolcot—"Anether, with a *slamming* stick,
Comed souse upon my sconce."—*Mid. Elect*.

Palmer—"STRAMMING. Great."

Rock—"STRAM. A loud knock. To knock hard." "STRAMMER. A great thing; a lie."

Lock—"STRAM. Any sudden, loud, and quick sound: as, to stram the doors, means to shut them with noise and violence. Hence a bold and unexpected lie that greatly shocks and surprises the hearer is called a *strammer*; and hence also, to *strammee*, means to tell great and notorious lies."

Pulman—"SLAM. To spoil. 'You've *slam'd* the broth.'" "An *slam* the doors as she da goo." *Ant's Tantrums*.

["STRAM" and "SLAM" are used about Looe. W. P.]

Forfar—"She *slammed* the haps [hasp. W. P.] agen my hand,
And bruised un black and blue."—*Exhib.* p. 77.

Fox—"A *slam'd* the poor soal on the head we a yevel."—*Dolly*, p. 16.

"Great *stromming* leya."—*Ibid*, p. 45.

Garland—"STRAM. 'The cart came *stram* against the

wall' 'He ran *stram* up against me." "STRAMMING (secondary sense of the preceding). 'He told me a *stramming* lie."

Sandys—"STRAM, STRAMMING. A great lie."

Tregulas—"Great *stramming* lies." *Tales*, p. 57.

Halliwell—"SLAM. To throw fast violently as a door; to fling down. *Var. dial.*" "SLAM-BANG. With great violence. *West.*" "STRAM. A loud sudden noise. *West.* To beat; to spring or recoil with violence and noise; to dash down. *Devon.*" "STRAM-BANG. Violently; startingly. *Devon.*"

Grose—"SLAM. To *slam* one; to beat or cut one strenuously; to push violently. 'He *slamm'd*-to the door.' *North.*" "STRAM. A sudden, loud, and quick sound: so, as a verb, 'to *stram* the doors' means to shut them with noise and violence." "STRAMMER. A great lie. *Exm.*"

245. "SLAP-DASH" is used about Ashburton and Torquay.

Rock—"SLAP-DASH. Rough lime and gravel, a ready coating for buildings."

Moore—"SLAP-DASH. Rough coating of buildings."

["SLAP-DASH" is used about Looe. W. P.]

Halliwell—"SLAP-DASH. In masonry, rough cast."

246. "SLAT-AXE" is used about Ashburton and Torquay.

Moore, Halliwell—"SLAT-AXE. A mattock with a short axe-end."

Couch—"SLADDOCKS. A cleaver used by masons for splitting and shaping slate. *Slate axe?*"

247. "SLEWERED-AWAY" is used about Ashburton; and "SLOOZED" about Torquay.

248. "SLIDE-BUTT" is used about Ashburton and Torquay.

Halliwell—"SLIDE-BUTT. A dung sledge. *Devon.*"

249. *Bray*—"SLOCK. To entice." ii. 289. *Note.*

"SLOCK" is used about Ashburton and Torquay.

Palmer—"SLOCK. To entice."

Jennings—"SLOCK. To obtain clandestinely."

Williams—"SLOCK. To encourage the servants of other people to pilfer."

["SLOCK" is used about Looe. W. P.]

Couch—"SLOCK. To entice. *Zu locken* (German), to decoy; to allure; &c."

Forfar—"Slocken of fools es a trick of your trade."—*Echib.* p. 57.

"Tom es slocked away from home."—*Ibid.* p. 87.

Halliwell—"SLOCK. To entice; to steal. *West.*"

Grose—"SLOCKET. To pilfer. Used when a servant conveys anything privately out of the house. *Berksh.*"

250. "SLOTTERING" is used about Ashburton and Torquay.

Baird—"An wan gaukimi thare way a turribul slotter,
Tuck'd up es two legs an val'd strat in tha wotter." i. 31.

Bowring—"SLOTTER. Spilt liquid." *Trans. Devon. Assoc.*, 1866, p. 15.

Palmer—"SLOTTERING. Dirty; wet."

Rock—"SLOTTER. To spill." "Thee'st slottered all thee drink abroad." p. 7.

Lock—"A toteling, wambling, slottering, zart-and-vair, yheatstool." p. 9.

Pulman—"SLOT. To spill. Hence, SLOTTER. To make untidy with liquid. 'Don't slotter the floor.'" "SLOTTERY. Wet, dirty weather. 'Slottery time o't, edd'n et?'"

Jennings—"SLOTTER. To dirty; to spill. Any liquid thrown about, or accidentally spilled on a table, or the ground" "SLOTTERING. Filthy; wasteful."

Couch—"SLOTTER. To draggle in the dirt (*slattern*)."

Sandys—"SLOTTERY. Dirty; wet; muddy." "SLOTTEREE (Cornish). Rainy weather; foul and dirty."

Tregellas—"SLOTTERY. Muddy, dirty weather."

Halliwell—"SLOTTER. Filth; nastiness. Also, to dirty, to bespatter with mud, &c. *Var. dial.* 'Sloturburges, *conulentus*, *Pr. Parv.*

'Than awght the sawle of synfulle withinne
Be full fowle, that es al slotyrd thar in synne.'

Hampole, MS. Boves, p. 76."

Grose—"SLATTER. To spill carelessly. *North.*" "SLOTTER. Nastiness. *Exm.*" "SLOTTERY WEATHER. Foul, wet weather. *West.*"

251. "SMALL" is used about Ashburton. "The Dart is small, i.e. low."

Moore—"SMALL. Low; shallow; as 'a small river.'"

Halliwell—"SMALL. Low and soft, as the voice. 'Speaks small like a woman.' *Merry Wives of Windsor*, i. 1. Also, low, as the water of a river, &c.

'And than the company answered all,
With voices sweet entuned, and so small.'

Chaucer's Floure and the Leaf, 180."

252. "SMEECH" is used about Ashburton and Torquay.

Palmer—"SMEECHING. Making an offensive smell in the fire."

Rock—"SMEETCH. Smoke."

"Git a mite o' rubbly cawl.

They've drawed a wallage on o' small,

"T'as *smeetchéd* all tha day." p. 9.

[i.e. Get a small quantity of small lumps of coal. They've thrown such a large quantity of small coal on the fire that, instead of burning up well, it has smoked all the day. W. P.]

Pulman—"SMEECH (A.S. *Smic*, smoke or dust). 'What a *smeech* 'tis along the roads wi th' pillum.'"

Moore—"SMEECH. Fine dust in the air."

Jennings—"SMEECH. Fine dust raised in the air."

Williams—"SMITCH, SMIT, SMEECH. Smut, or fine dust."

Barnes—"SMITCH, or SMEECH (A.S. *Smic*. Smoke). Fine dust stirred up in a room or in a road."

["SMEECH," or "SMITCH," is used about Looe. W. P.]

T. Q. Couch—"SMITCH. Fine sooty dust in motion."

Garland—"SMEECH. An offensive smell. The smoke from a candle."

Cooke—"SMEECH. Fine dust raised in the air."

Parish—"SMEECH, or SMUTCH. [*Smec*, Ang. Sax. Smoke, vapour.] A dirty black sort of smoke or mist. In the West of England the word means a stench, and is applied to the smell of the snuff of a candle."

Halliwel—"SMEECH. A stench. *Devon*. *Smych* occurs in an early MS. quoted in *Wright's Essay on Purgatory*, p. 144. '*Smeech*, to make a stink with the snuff of a candle.' MS. *Devon*. *Glossary* in my possession. Obscurity in the air, arising from smoke, fog, or dust. *South and West*." "SMITCH. Dirt; but generally applied to smoke or dust. *West*."

Grose—"SMIT. To smit; to infect. *North*." "SMITTING. Catching; infectious. *North*. "SMITTLE. To smittle; to infect. From the old Saxon *smittan*, and Dutch *smetten*, to spot or infect. Whence our word *smut*. *North* "SMITTLEISH. Infectious. *North*."

253. "SMEERED" is used about Ashburton and Torquay.

254. [See "SUENT" in Miss Fox's list. W. P.]

"SUENT".is used about Ashburton and Torquay.

Lake—"SEUANT. In order; well-arranged (? form of *sui-vant*)."

Baird—"Wile zom bee ruff, and *zuant* bee zom." ii. 2.

"I zeed a mayd a gwayn ta church,
A *suant* blishin bride." ii. 8.

"An' now hur veace wiz *suant* quite,
Et wadd'n nether urd nor white,
Bit zweet ta luk apon." ii. 37.

Bowring—"SUENT and SCOVY. Admirable designations of what is smooth and regular, and of the contrary." *Trans. Devon. Assoc.*, 1866, p. 15.

Palmer—"SUENT. Even; smooth."

Rock—"SUANT. Even." "All seems gwayin *suant*." p. 11.

Pulman—"SUANT. Smooth; regular; even."

Moore—"SOUANT. Fair; even; regular."

Jennings—"SUENT. Even; smooth; plain." "SUENTLY. Evenly; smoothly; plainly."

Williams—"SUANT. Even; regular: applied to rows of beans or corn."

Barnes—"SUENT. Smooth; even."

["SUENT" is used about Looe. W. P.]

Couch—"SUENT. Smooth; equable; even."

Daniel—"Our pair, ef things go *suant*, will
Be jontlemen an' rich."—*Companion*, p. 19.

Sandys—"SUANT, SUANTLY. Smooth; smoothly; prosperously."

Cooke—"SUENT. Even; smooth; plain."

Parrish—"SUENT. Pleasant; agreeable."

Halliwell—"SUENT. Smooth; even; regular; quiet; easy; insinuating; placid. *West*."

Grose—"ZUANT. Regularly sowed. 'The wheat must be zown *suant*.' *West*."

255. "SPADE" is used about Ashburton.

Halliwell—"SPADE. To breast-plough. *Devon*."

256. "SPAR" is used about Ashburton; "SPEAR" and "SPARROW" about Torquay.

Pulman—"SPAR-GAD. The stick out of which *spars* are made. *Sparran* is Anglo-Saxon for *to bar*, and a *spar* or wooden bar is commonly used for fastening a gate. Spenser says—
'*Sparre* the gate fast for fear of fraud.'

Hence, as Dean Hoare suggests, '*sparring*' may mean *fencing* or *barring* of blows."

Jennings—"SPAR. The pointed sticks, doubled and twisted in the middle, and used for fixing the thatch of a roof, are called *spars*: they are comunonly made of split willow rods."

Williams—"SPAR-GAD. Sticks split to be used for thatching."

Barnes—"SPARS (A.S. *spere*, a spear or sharp body). Sharp sticks, usually of withy or hazel, twisted in the middle and bent for fastening down thatch." "SPARHOOK. A small hook for making or cutting *spars*."

["SPARROW" is used about Looe as a name for the stick described by Mr. Jennings. W. P.]

Couch—"SPARROW. A double wooden skewer used in thatching."

Garland—"SPARS. Willow rods for thatching."

Parish—"SPAR [*Spere*, Ang. Sax., a spear]. A stick pointed at each end, and doubled and twisted in the middle; used by thatchers to secure the straw on the roof of a stack or building."

Halliwell—"SPAR. The pointed stick used for fixing the thatch of a roof. *West*."

257. "SPINE" is used about Ashburton and Torquay.

Rock, Pulman—"SPINE. Turf; sward."

Williams—"SPINE. The sward or surface of the ground."

Halliwell—"SPINE. The greensward. *West*."

258. *Rock, Moore*—"SPIRE. Reed."

259. "SPROIL" is used about Ashburton and Torquay.

Lake—"SPROIL. Energy; strength."

Palmer—"STROIL. Strength."

Rock—"STROILE. Strength." "Doant dra thee *stroile* away." p. 18.

Lock—"STROIL (From struggle.) Strength and agility. 'Thou hast no *stroil* ner docity;' i.e. No activity nor docility, no more agility or motion than a person disabled from striving or struggling."

Halliwell—"SPROIL. Liveliness. *Devon*. STROIL. Strength; agility. *Devon*."

Grose—"SPROIL. Lively, active. *West*." "STROIL. Strength and agility. 'Thou hast neither *stroil* nor docity.' *Exm*."

260. *Walker*—"SQUAT. To sit cowering; to sit close to the ground; cowering close to the ground; short and thick; having one part close to another, as those of an animal, contracted and cowering; the posture of cowering or lying close; a sudden fall."

"*Perry*—"SQUAT. To sit close to the ground. The posture

of cowering; sudden fall; bruize. Cowering; close; short; thick."

"SQUAT" is used about Ashburton and Torquay.

Baird—"Ez muvments widd'n *squat* a egg." ii. 46.

Palmer—"SQUAT. Squeezed."

Lock—"SQUAT. To quat down." "Eart *squatting* upon thy tether eend." p. 13.

Pulman—"SQUOT. To sit down heavily; to flatten anything with a blow; to crush. 'I've *squot* my finger.'"

Jennings—"SQUOT. To bruize; to compress; to squat. A bruize, by some blow or compression; A squeeze."

Williams—"SQUAP. To sit down without any employment."

Barnes—"SQUOT. To flatten by a blow."

"Tha didst *squot* upon a bank."—*Dock Leaves*.

"Did *squot* down to snabble ther cheese an' ther kiakes."

Vallen the Tree.

"A *squot* upon the grass."—*Hay-miaken*.

["SQUAT" is used about Looe. W. P.]

T. Q. Couch—"SQUAT. To squeeze flat."

Daniel—"The hosses haid is *squot* abroad." *Companion*, p. 28.

Parish—"SQUAT. To indent or bruise anything by letting it fall."

Thoresby—"SQUAT DOWN. To come down suddenly." *Eng. Dial. Soc. B.* 17.

Halliwell—"SQUAT. To bruize; to lay flat; to slap. *South*. 'In our Western language *squat* is a bruize.' *Aubrey's Wilts. Royal Soc. MS.* p. 127. 'To *squatte*, or throwe anie thing against the ground.' *Baret*, T. 213.

'And you take me so near the net again,

I'll give you leave to *squat* me.'—*Middleton's Works*, v. 36.

To compress. *Devon*. Flat. To make flat. *Kent*."

Grose—"SQUAT. To bruize, or make flat, by letting fall; active. *South*."

261. *Walker*—"SQUEAK. To break silence or secrecy through fear or pain."

Perry—"SQUEAK. To betray a secret."

"SQUEAK" is used about Ashburton and Torquay.

Palmer—"SQUEAK. Spoke."

Lock—"If ever tha *squeakest* wone word more o' tha bed-blonket." p. 10.

["SQUEAK" is used about Looe to denote any mode of betraying a secret. In our game of *Hide and Seek*, which

we called "*Squeak-it*," when the "side" or party whose turn it was to "go out" to hide themselves, had been allowed a reasonable time for that purpose, the leader of the "side" at the goal (locally *gould*) challenged them in a loud voice, in the following formula—

"Peep, *squeak*, or holla,
Or else my little dogs shall not follow."

i.e. Betray, to some extent, and in any way you prefer, the secret of your hiding-place, or we decline to seek you. W. P.]

Halliwell—"SQUEAKED. Spoke. *Devon*."

262. "STAFF" is used about Torquay as a name for 8·25 feet, half a rod.

Rock, Cooke—"STAFF. Nine feet, half a rod."

263. "STAGG" is used about Ashburton and Torquay.

264. "STEM" is used about Ashburton and Torquay.

Pulman—"STEM. The handle of a pick or shovel."

Jennings—"STEM. A long round shaft, used as a handle for various tools."

Barnes—"STEM. The handle of a pick or rake."

Halliwell—"STEM. The handle of a tool. *Devon*."

265. "STEWER" is used about Ashburton and Torquay.

Baird—"An a kik'd up tha pilamy and made zuch a *stewer*." i. 32.

Palmer—"STEWER. Dust."

Rock—"STEWER. A dust; a fuss."

Lock—"STURE. A dust raised."

Halliwell—"STURE. Dust; disturbance."

Grose—"STEW. When the air is full of dust, smoke, or steam. *North*." "STURE. A dust raised. *Exm*."

266. *Palmer*—"STEWARDLY. Managing."

Lock—"Hare's net as some giglets . . . bet a tyrant maid vor work, and tha *stewarliest* and vittiest wanch that comath on tha stones o' Moulton, no dispreise." pp. 27-8.

Halliwell—"STEWARDLY. Careful; managing. *Devon*."

Grose—"STEWARDLY. Like a good housewife."

267. "STICKLE" is used about Ashburton and Torquay.

Rock—"STICKLE. Steep; a small stream."

Pulman—"STICKLE (A.S. *Sticcel*). A 'run' or swift part

of a river. *Stickle* also means *steep*. The thatcher says 'Theck roof's tur'ble *stickle* ee ez.'

King—"STICKLEPATH (i.e. steep road; A.S. *stigele*, steep. *Stickle* is the west country word for a rapid. *Stickles* and ranges are respectively the rough shallows and smooth ranges of a stream)." p. 75.

Jennings—"STICKLE. *Steep*, applied to hills; *rapid*, applied to water: a *stickle* path, is a steep path; a *stickle* stream, a rapid stream."

Williams—"STICKLE. Shallow rapids in a stream. Steep as a hill."

Bannister—"STICKLE HILL. ? STILE (*stigel*, Saxon) or steep (*sticle*, Saxon) hill, Teutonic."

Carew—"They are mostly taken with a hooke net . . . which is placed in the *sticklest* part of the stream." p. 28.

Halliwell—"STICKLE. A shallow in a river where the water, being confined, runs with violence. *Somerset*. The term is applied to the violence and rapidity in the following passage: 'When they came thither, the river of the Shenin, which invironeth and runneth round about the Citie, they found the same to be so deepe and *stikle* that they could not passe over the same.' *Holinshed, Cong. Ireland*, p. 37. Steep, *Devon*."

Browne—"Patient anglers, standing all the day
Near to some shallow *stickles* or deep bay."

268. "STRAM-BANG" is used about Ashburton and Torquay.

Palmer—"STRAMBANG. Fling violently."

["STRAM-BANG" is used about Looe. W. P.]

Sandys—"STAM-BANG. Plump down."

Halliwell—"STRAM-BANG. Violently; startingly. *Devon*."

269. [See "STROYL" in Mr. Marshall's list. W. P.]

"STROIL" is used about Ashburton and Torquay.

Rock—"STROYL. Couch grass, or other long weed usually raked out of the soil."

Lock—"STROIL. The long roots of weeds and grass in grounds not properly cultivated."

Moore—"STROYL. Couch-grass, or other weed, raked out of the soil."

["STROIL" is used about Looe. W. P.]

Couch—"STROIL. Weed, especially the couch grass, *Triticum repens*."

Halliwell—"STROIL. Couch-grass. *West*."

Grose—"STROIL. A denomination for the long roots of weeds and grass in grounds not properly cultivated."

270. *Rock, Moore*—"STROLL. A narrow slip of land."

Halliwell—"STROLL. A narrow slip of land. *Devon*."

271. [See "STROIL" in Miss Fox's list. W. P.]

272. [See "SOVANT" in Mr. Marshall's list. W. P.]

273. *Perry*—"SURVEY. Public sale."

"SURVEY" is used about Ashburton as a name for all sales at auction.

Rock—"SURVEY. An agricultural auction." "At Varmer Voss, ta Coomb's, gurt *survey*." p. 30.

Moore—"SURVEY. A sort of auction for farms."

Vancouver—"The usual manner of letting these and most other estates is by holding what is here called a *survey*, that is an auction, which is announced to the public by hand-bills, and advertisements in the public papers that at such a time and place a farm is to be lett by *survey*: it now becomes the business of the steward to have everything in readiness at the public house, to stimulate and encourage the bidding; which closed, the landlord through his steward (if not present himself) names his price, which is offered to the highest bidder, downwards to the last person who would be approved of by the landlord or steward: should no one accept it, the company disperses, and the farm is afterwards disposed of by private contract, no preference beyond that which arises from the highest offer, being given to the old tenant or his family, whose principal object during the latter period of the term is usually to dilapidate, pare and burn, and by every method which can be devised, despoil the farm of all its fruitful energies. On many occasions there is a per centage allowed to the steward, for his address in procuring a high bidding at the *survey*." pp. 82-3.

Pulman—"SURVEY. A sale by auction."

["SURVEY" was used about Looe as the name of all sales at auction. Such sales were as much resorted to by those in search of fun, and even mischief, as those who hoped for "a bargain," as the auctioneer frequently thought it a part of his business to indulge in jokes and even buffoonery. W. P.]

Carew—"They find means by a *survey*, to defray any extraordinary charge of building, marriage, lawing, or such like." p. 64.

Hallivell—"SURVEY. A species of auction, in which farms are disposed of for three lives. *Devon*."

Prince—"Sold by the sequestrators at a public *survey* (as it is here called, a kind of auction long practised in these parts)." p. 68.

274. *Walker*—"SWOP. To change; to exchange one thing for another."

Perry—"SWOP, SWAP. To exchange; barter."

"SWAP" is used about Ashburton and Torquay.

Palmer—"SWAP. Exchange."

Pulman—"SWOP. To exchange; to barter. Used by the old writers."

Barnes—"SWOP. To barter or exchange."

["SWAP" is used about Looe. W. P.]

Couch—"SWOP. To barter."

Tregellas—"SWOP. Exchange."

Harland—"SWAP. To exchange or barter. *Eng. Dial.*" Soc. C. 1.

Hutton—"SWOAP. To exchange." *Ibid*, B. 1.

Hallivell—"SWAP, SWOP. To barter; to exchange. *Var. dial.*"

275. *Walker*—"SWELTER. To be pained with heat. To parch or dry up with heat." "SWELTRY. Suffocating with heat."

Perry—"SWELTER. To parch, dry up with heat." "SWELTRY. Suffocating with heat."

"SWELTER" is used about Torquay.

Bowring—"SWELTER. Extreme perspiration."

Palmer—"SWELTER. Melt."

Pulman—"SWELTERED (A.S. *Swelan*, to burn). Overheated in body. So SWELTERING, applied to the weather, means oppressively hot and close."

Barnes—"SWEÆLE. To scorch." "ZWÆAL (A.S. *Swelan*). To singe; to scorch; to burn superficially. 'Seo sunne hit forswælde.' The sun scorched it. Mark iv. 6. 'Do you scald your pigs or *zweal* em?' 'He's lik' a *zwæled* cat; better than 'e da look var."

Duncumb—"SWELTERED. Much heated. Spencer uses *swelt*, whence, perhaps, *sultry*. [*Swelt* = burnt. F. 2, i. 7, 6.]" *Eng. Dial. Soc.*, B. 12.

Parish—"SWELT [*Sweltan*, Ang. Sax., to kindle]. Hot; faint. 'Like a *swelt* cat, better than it looks.'"

Harland—"SWELTER. To melt with heat; also a violent perspiration." *Eng. Dial. Soc.*, C. 1.

N. & Q.—"Dr. Hyde Clarke's *Dictionary of the English Language* contains as follows, marked as of Saxon origin: 'SWELTER, SWELTERING, SWELT. Burn or suffer with heat; run with sweat; overpower with heat.'" 4th S. iv. 46.

Halliwel—"SWELTE. To broil with heat. *North*."

'The dugged dog daies now with heat doe *swelt*,
And now 's the season of th' unseasn'd aire.'

Taylor's Workes, ii. 256.

'Soft a while, not away so fast, they melt them;
Piper, be hang'd awhile! knave, looke the dancers *swelt* them.'

British Bibliographer, i. 343."

"SWELTERED. Very hot; overcome with heat; in a great perspiration. *West*. 'Sweltered venom,' venom moistened with animal's sweat, *Shak*. 'Swaltteryng or swownyng, *sincopa*.' *Pr. Parv. MS. Harl.*, 221. f. 167. 'SWELTRY. Overpoweringly sultry.'

'But as we see the sunne oft times, through over *sweltrie* heate,
Changing the weather faire, great storms and thundercracks doth threat.'

Honour's Academie, 1610, i. 18."

[About Looe, objects put too near the fire were said to be liable to be *swealed*. Cats too fond of the chimney corner were supposed to acquire an appearance which was termed *swealed*; and women who remained too much within doors were said to be "like *swealed* cats." W. P.]

276. *Walker*—"SWINGING. Great; huge." "SWINGINGLY. Vastly; greatly."

Perry—"SWINGING. Great; huge." "SWINGINGLY. Vastly; hugely."

Bowring—"SWINGING. Great." *Trans. Devon. Assoc.*, 1866, p. 27.

Palmer—"SWINGING. Huge."

Pulman—"SWINDGIN. Great; extreme. 'What a *swindgin* vrost.'"

277. *Palmer*—"TANTARA. Disturbance."

Halliwel—"TANTARA. A confused noise. *Var. dial*. It was formerly applied to the noise of a drum.

'Ther's no *tantara*, sa sa sa, or force,
Of man to man, or warlike horse to horse.'

Taylor's Workes, 1630, iii. 66."

278. "TANTAREM" is used about Ashburton and Torquay.

Palmer—"TANTAREMS. Vagaries."

Pulman—"TANTRUM. (Welsh *Tant*, a stretch; a spasm; a gust of passion.) To be in a *tantrum* means extreme testiness, or to be in a violent fit of anger."

Barnes—"TANTRUM. A paroxysm of anger; a fit of excitement."

["TANTRUM" is used about Looe. W. P.]

Forfar—"Lev me see the cheeld! es et her awn—es et? that she's in her *tantrums* like that?" *Exhib.* p. 36.

Fox—"When a gote en eis *tantrums*." *Dolly*, p. 46.

Sandys—"TANTRUMS. Whims; freaks."

279. [See "TILL" in Miss Fox's list. W. P.]

Walker—"TILL. To cultivate; to husband; commonly used of the husbandry of the plough."

Perry—"TILL. To cultivate; plough and sow."

"TEEL" is used about Ashburton and Torquay.

Palmer—"TEELED. Set."

Pulman—"TILL (A.S. *Tilian*, to prepare). To set a trap."

Jennings—"TILL. To set a thing in such a situation that it may easily fall."

["TEEL," or "TAIL," is used about Looe to signify to *till*, to set, to be prepared; thus, "to *teel* the corn or potatoes," "to *teel* a trap," and "I'm *teel'd* for him." W. P.]

Couch—"TAIL. To till or set. '*Tail* the corn,' or '*tail* a trap.'"

Daniel—"But i cud match un, never fear—
Iss, for un I was *teel'd*."—*Mary Ann*.

Halliwell—"TEEL. To set a trap. *Devon*. To sow and harrow in seed. *West*."

280, 281. "THICKY" is used about Torquay.

Baird—"Zes I tu a chap, 'What dee cal *this* a-head?' i. 16.

"Wull es gits in *thick* place and tho' haf arter wan." i. 24.

"If in *thicky* place bit wan voot es cude git." i. 33.

Bowring—"THIK, THIKKE, THAK, THIKKA. This here and that there." *Trans. Devon. Assoc.*, 1866, p. 27.

Palmer—"THICKA. That. THICKEE. This."

Rock—"THACK, THACKY. That." "THECKY. Those." "THICK, THICKY. This." "Yen ma *thick* Crismus brawn." p. 3.

Whyte-Melville—"There be a price on *this* head o' yourn." p. 240.

Pulman—"THECK, THICK, THUCK. (Anglo-Saxon.) Used by all the old writers. 'Thick,' says Mr. Akerman, 'is the natural corruption of *thilk*, which you will find repeatedly in Chaucer, and *thuck* is an equally natural corruption of *thulk*,

which you will repeatedly discover in Robert of Gloster's *Chronicle* and in the MS. of *Piers Plowman*. So you see that my friend here [a countryman] is only talking a language which the scholar and the gentleman once used."

Jennings—"THIC. That. (Thilk, *Chaucer*). [West of the Parret, *THECKY*.]

Willimas—"THIC, THICKY, THICKY-THERE, THICKIMY, THICKIMY-THERE. That. (*Chaucer*, *Thilk*)."

Barnes—"THIK. That."

["THIC" and "THICKY" (the *th* being sounded as in *this*, not as in *thin*) are used about Looe. W. P.]

Daniel—"Now *thecky* night I cudden blink
My eyes, an' cudden alaip a wink."—*Portfolio*, p. 24.

Gervis—"And *thickey* afor 'e." *Ballads*, p. 35.

Sandys—"THICEY, THICEY. That."

Tregellas—"THICEY. That." "I'll go to *thickey* lecture." *Tales*, p. 25. "Doant ee bring *thicky* hoss weth ee." *Peeps*, p. 30.

Verrall—"Taan't feer, to trait me *thicky* way." *Exhib.* p. 41.

Halliwel—"THEC. That. *I. of Wight*." "THICKEE. This. *Devon*." "THICKEMMY. That. *Somerset*."

Grose—"THEK, THECKEE, or THECKA. This, in the Western dialect, is generally, not always, used for *that*, when it is a pronoun demonstrative, but never when it is a pronoun relative, or conjunction; in which case, *that*, or *thate*, is the word used. *Exm.*"

Chaucer—"For *thilk* fire that whilom burned thee,
As well as that this fire now burneth me."
Knight's Tale, lines 2405-6.

"Full oft a day have *thilk* Thebans too
Together met, and wrought each other woe."
Ibid, 2625-6.

"But it were *thilk* eyen of his mind
With which men moyen see when they be blind."
Man of Law's Tale, lines 4972-3.

282. "TIDLY GOLDFINCH" is used about Ashburton.

283. "TIDLY TOPE" is used about Ashburton and Torquay.

284. [See "TEEL" in Miss Fox's list. W. P.]

285. "TONGUE TREE" is used about Ashburton.

Moore—"TONGTREE. The pole of an ox-cart."

Halliwel—"TONGUE-TREE. The pole of a waggon."

286. *Perry*—"TOR. A high pointed rock."

Bray—"In Gibson's edition of *Camden's Britannia*, we are informed that Brent Tor is a name signifying 'a high rocky place.' As *Tor* alone can lay claim to the greater part, if not the whole of this definition (for *tor*, tower, turris, are all of the same import, meaning something elevated; and *tor* moreover, is generally, at least in Devonshire, confined to a rocky hill), the first syllable, and thus the very name of the place itself, is totally omitted." i. 250-1.

"TOR" is used about Ashburton and Torquay.

Bouring—"TOR is generally traced in our dictionaries to an Anglo-Saxon origin. In Gaelic, however, it is found in the oldest records, both of prose and poetry, spelt *torr*. In Welsh and Armoric it is *twr* and *twrr*. Pliny mentions *dyr* as a Mauritanian word for Mount Atlas. *Taurus* is the same designation latinized in Asia. It gives names to places amongst the Arabs; as, for example, *Tour*, an elevated spot in the Gulf of Suez. In Norway it is the name of one of the highest mountains. It is found—accommodated to the language—in Spain, Italy, France, and several other European countries—in the ancient Chaldee, and in the modern Persian. There are few words of so great an antiquity and so wide a diffusion. It is seen in all the branches of the Gothic stem." *Trans. Devon. Assoc.*, 1866, pp. 31-2.

King—"The word occurs in both Somersetshire (*Glastonbury Tor*) and Derbyshire, and is apparently cognate with the Hebrew *Tsoor* = a rock, and the Phenician *Tor* = Tyre (compare also the Turkish *dagh*, and the form which occurs so frequently in the Caucasus)." pp. 208-9.

Moore—"TOR. A rude rack [*? rock*. W. P.] on the top of a hill."

Bannister—"TORR. Prominence or hill (*tor*, a belly); a peak (*tour*, tower); water (*dour*)."

Hallivell—"TOR. A hill. *Devon*."

Grove—"TOR. A high rock; as *Mam-tor*, a high rock in Derbyshire. *North*."

Prince—"Brewer, Lord William, was born . . . most likely at Tor Brewer, so called of old from the *torrs* and rocks which abound in these parts, and this noble family. But of latter times . . . it is commonly stiled *Tor-Mohun*." p. 120.

287. "TORMENTING" is used about Ashburton and Torquay.

Rock—"TORMENTOR. Implement to turn peat with."

Vancouver—"Scarifiers, scufflers, shims, and broad shares

of various constructions, and called under the general name of *tormentors*, are very much resorted to in crossing the balks of whole ground, left after the velling and skirting operations for peat-burning." p. 121. "After harvest, the *tormentors*, drags, and harrows, are applied to the thinly skirted surface." p. 161.

["*TORMENTORS*" and "*TORMENTING*" are used about Looe. W. P.]

Halliwell—"TORMENTING. Sub-ploughing, or sub-hoeing. Devon."

288. "*TOTLE*" is used about Ashburton.

Lock—"TOTLE. A slow, lazy person; an idle fool that does his work awkwardly and slowly.—To *totle* and *totee* about. To totter up and down."

Halliwell—"TOTLE. A lazy person. West."

Grose—"TOTLE. A slow, lazy person. Exm." "*TOTLING*. Slow; idle. Exm."

["*TOTLING*" and "*TOTLISH*" are used about Looe to denote mental imbecility. Tregellas has "*TOTLE*. A foolish fellow." W. P.]

289. "*TRAFFIC*" is used about Ashburton and Torquay.

["*TRAFFIC*" is used about Looe. W. P.]

Halliwell—"TRAFFICK. Lumber; rubbish. North."

290. *Walker*—"TRAPE. To run idly and sluttishly about. Commonly written and pronounced *Traipse*." "*TRAPES*. A slatternly woman."

Perry—"TRAIPSE. A woman negligent in dress. To walk in a sluttish manner." "*TRAPES*. A *traipse*; slatternly woman."

"*TRAPES*" is used about Ashburton and Torquay.

Baird—"Ah! I winder wat thou, deer cheel (za pur
Until vorrid thy vutstaps bend),
Wen thou, tu, travel'th tha raud I've *trape'st*,
Ull bee et thy journey's end?" ii. 2.

"An' vundermore tiz vul a zlotter,
An' dree pairts auver shu in wotter;
Zo thee mit's gess twid be a *trapes*
Vur ort indud way mort'l shapae." ii. 39.

Palmer—"TRAPES. An idle, slatternly woman."

Rock—"TRAPES. A slut; a sloven." "'A *trap'th* wi' thick stayhopping vixen." p. 25.

Lock—"Ya confounded *trapes*." p. 9. "Whan's zeed tha whilere *trapesee* hum." p. 12. "Ma' be wet *trapesee* hum avore

the dusk of the yeavling." p. 14. "Ya gurt voolesh *trapes*." p. 24.

Pulman—"TRAPESE, TRAPSEY. To walk slovenly."

Jennings—"TRAPESE. To go to and fro in the dirt. A slattern."

Williams—"TRAPESE. A slattern; to walk in the dirt."

["TRAPESE" and "TRAPESEING" are used about Looe. W. P.]

T. Q. Couch—"TRAAPSE. To walk slovenly."

Daniel—"My cranerlin wos in a *trapes*." *Mary Ann*, p. 23.

Forfar—"As we *traped* down the street we mit lots of fine folks." *Exhib.* p. 4.

Cooke—"TRAPESE. A slut."

Parish—"TRAPE. To trail; to drag along the ground. 'Her gown *trapes* along the floor.'" "TRAPESE-ABOUT. To run about in an untidy, slovenly manner; to allow the dress to trail on the ground. A Sussex maid, describing to another servant how her mistress went to Court, said, 'And as soon as ever they sees the Queen they lets their dress-tails *trapes*, because it aint manners to hold 'em up.'"

Harland—"TRAPESE. A slattern; draggel-trail; trollop." "TRAPESEY. Slatternly; sluttish." *Eng. Dial. Soc.* C. 1.

Halliwel—"TRAPESE. A slattern. *Var. dial.* To wander about. *Var. dial.*" "TRAPESEING. Slow; listless. *North.*"

291. ["TRONE" is used about Looe as a name for a depression in the ground. W. P.]

Couch—"TRONE. A furrow."

T. Q. Couch—"TRONE. The depression between furrows." [What is meant by "a depression between furrows"? W. P.]

292. *Walker*—"TROUNCE. To punish by indictment or by information."

Perry—"TROUNCE. To punish severely; sue." "TROUNCEING. The act of punishing severely or by indictment."

"TROUNCE," to take the law, is used about Ashburton and Torquay.

Palmer—"TROUNCEING. Floundering." "Swearing he would *trounce* her if there was any law in the land." p. 13.

Pulman—"TROUNCE. To have the law of a person."

Halliwel—"TROUNCE. To beat. *Var. dial.* TROUNCE. One who beats. Ovid de arte Amandi, a mock poem. Lond., 1677, p. 149."

293. *Walker*. "TRUSS. Bundle. Anything thrust close together. To pack up close together."

Perry—"TRUSS. A bundle."

"TRUSS," = three cwt., is used about Ashburton; and = a bundle, about Torquay.

294 and 295. *Bowring*—"TUCKER . . . had disappeared with the dis-appearance of the woolen trade." *Trans. Devon. Assoc.*, 1866, p. 15.

Rock—"TUCKER. A fuller."

Pulman—"TUCKER. A Fuller—familiar in this locality when the cloth trade flourished in the West of England, but now never heard except as a proper name."

Williams—"TUCKER. A Fuller, also TUCKING MILL."

Bannister—"TOKER = TUCKER. ? FULLER, *Teutonic*; or *Trocicwr*, a clipper, *Welsh*. TUCK MILL = TUCKINGMILL. Fulling Mill."

Halliwell—"TUCKER. A fuller. *West*."

296. *Bray*—"Carrying away '*turves*' (peat)." i. 260. "Her reply was that the stable was full of *turf*, by which she meant peat." i. 294.

"TURF" is used about Ashburton and Torquay as a name for peat.

Jennings—"TURF, pl. TURVES. Peat cut into pieces and dried for fuel."

Tregellas—"I see our *turf* rick."—*Tales*, p. 84.

"Find the pooks of *turves*."—*Ibid*, p. 185.

"Near a *turf* fire sat an old man."—*Peeps*, p. 136.

Halliwell—"TURF. Cakes for firing, made by tanners from the refuse of oak bark. *Wilts*. Peat moss."

Grose—"TURF. Peat. *Norf*."

297. *Palmer*. "UNRAY. Undress."

Rock—"UNRAY. To undress."

"Zum more weather-lucker chap

'I'll help thee to *unray*." p. 23.

[i.e. Some better looking man will be your husband. W. P.]

Pulman—"UNRAY (unarray). To undress."

Jennings, Barnes—"UNRAY. To undress."

Williams—"UNRAY. To undress. 'I do ston to ray, and I do ston to *unray*.'"

Cooke—"UNRAY. To undress."

Halliwell—"UNRAY. To undress. *West*."

298. "VAG" is used about Ashburton and Torquay.

Halliwell—"VAG. Turf for fuel."

299. "VANG" is used about Ashburton and Torquay.

Baird—"Wich tha chaps wis ta *vung*." i. 31.

Palmer—"VANG. Take."

Rock—"VANG (*gy*. to finger). To receive; to raise money."
"Vang up veevety poun."

Lock—"VANG (Sax. *fangan*, *capere*). To take; and likewise to undertake at the font as a sponsor for a child."

Pulman—"VANG (German *fangan*, to take). To earn; to receive; to collect. 'I han't *vang'd* my wages itt.' *Vang*, also, in some places, means to answer for at the font, to promise as a sponsor."

Jennings—"VANG. To receive; to earn."

Williams—"VANG. To take or catch; to receive as well as earn wages. 'To *vang* a fire.' 'To *vang* money.' Also to stand sponsor. (A.S. *fangan*)."

Barnes—"VANG. (German, *Fangen*.) To take; to earn."

["VANG," to receive anything—to *vang* money, to *vang* water in a pitcher—is used about Looe. W. P.]

Couch—"FANG, or VANG. To take; collect; handle. A.S. *fengan*. 'To *vang* money.'"

T. Q. Couch—"FANG, or VANG. To take; collect; handle; or receive. A.S. *fengan*."

Daniel—"I *vang'd* some trade or catch ov he." *Batch*, p. 9.

Fox—"I'd not go a neest en to *fang* the King's Crown."—*Dolly*, p. 43.

"Why a spent haafe es *fangings* least Saturday neyt."—*Ibid*, p. 46.

Higham—"His *fangens* es better than they was home heere." *Exhib*. p. 144.

Sandys—"FANG, FANGING. To get; to seize; *fanging*, applied as earnings, from Angl. Sax. *fangan*."

Tregellas—"FANG. To receive; to take up money." "I have to *fang* fowr pound six and tuppence." *Tales*, p. 164.

Cooke—"FANG. To take possession of. 'I *fang'd* to that estate last Christmas.' 'I *fang'd* a child, or received a child.'" "VANG. To receive, or earn."

Halliwell—"VANG. To receive; to earn; to catch; to throw. Ray says, 'to answer for at the font as godfather; he *vang'd* to me at the vant.'"

Grose—"VANG. To take; to receive. From *fangan*, German. VANG. To stand sponsor to a child. *Ecm*."

300. "VAT" is used about Ashburton and Torquay.

["VAT" is used about Looe. W. P.]

Halliwell—"VAT. The bed of a cider press."

301. "VAIGE," or "VEGE," is used about Torquay.

Palmer—"Up a rak'd, . . . and vetch'd a *vege* to thicka plashet." pp. 4-5.

Rock—"VAIGE, VAISE. The strength gained in taking a leap by previously receding."

"Jim looked the chounting chap ta paise,
Then ran agen en way a *vaise*," p. 33.

Pulman—"VAIGE. Strength or impetus gained by running to leap. 'Vetch a *vaige*, Jack, vore's jump.'"

Jennings—"VAGE, VAZE. A voyage; but more commonly applied to the distance employed to increase the intensity of motion or action from a given point."

Williams—"VAGE, VAZE. To move about or run in such a way as to agitate the air."

Halliwell—"VAGE. To stroll; to wander about. Also . . . a voyage; a journey." "VEGE. A run before leaping. *West*."

302. "VELL" is used about Torquay.

Rock—"VELL. Part of a plough. To separate the turf from the soil." "VELLING PLOUGH. A plough to take off the turf."

Moore—"VELL. To separate the turf entirely from the soil."

Vancouver—"When *velling* is performed, the wing of the share is turned upwards, forming a sharp comb upon its outside angle." p. 116.

Grose—"VELLING. Ploughing up the turf or upper surface of the ground, to lay in heaps to burn. *South*."

303. [See "VITTY" in Miss Fox's list. W. P.]

Walker—"FIT. Qualified; proper; convenient; meet; right."

Perry—"FIT. Qualified; proper; meet."

"VITTY" is used about Ashburton and Torquay."

Baird—"Her dude et za *vitty*, an light as a veather." i. 20.

Wolcot—"No fath; it wasn't *vitty*."—*Roy. Vis*.

"Voakes zay I'm perty *vitty*."—*Dev. Hob*.

Palmer—"VITTEE, or VITTY. Fitly; apt; decent; handsome."

Rock—"VITTY. Fitting; proper." "Small time to get things *vitty*." p. 3.

Lock—"VITTY. Neat."

Pulman—"VITTY (Fitting). Rightly; properly. 'Th' rod don't drow *vitty*.'"

Moore—"VITTY. Apposite; suitable."

Jennings—"VITTY. Properly; aptly."

Williams—"VITTEN, VITTY. Fitly; featly; properly applied."

Barnes—"VITTY. Fitly; properly; neatly."

["VITTY" and "FITTY" are used about Looe. W. P.]

Couch—"FITTY. Fitting; proper."

Daniel—"Cudden cut un *fitty*."—*Mary Ann*, p. 14.

"Cudden make a *vitty* ring."—*Ibid*, p. 21.

Henwood—"Leve the straingers taste un, and see what count-house punch es like when es made *fitty*." *Conference*, p. 24.

Higham—"Thee'st conduct thyself *fitty*, heere in the oppen street." *Exhib.* p. 137.

Sandys—"FITTY. Clever; proper; becoming."

Verrall—"But aw fie! doan't ee stail 'em, Jack, Taan't *fitty*, 'cept you put em back."—*Exhib.*, p. 41.

Halliwell—"FITTY Neat; clever; proper. *South*." "VITTY. Decent; proper; handsome. *West*."

["FITTY" and "VITTY" or "VITTEE" are, of course, merely varieties of the same word, and may have originated in the habit, prevalent at least in Devon and Cornwall, of adding *y*, or *ee*, or *ie*, to certain words. Thus, perhaps, *Fit* became *Fitty*, which in its turn became *Vitty*, and ultimately *Vittee*. The following are Devonshire examples of this habit:—"Than tha wut . . . *bl'azee* . . . ennybody" (= then thou wilt blaze, *i.e.* proclaim, the faults of anybody), *Lock*, 15. "I begun'd vur ta *blinky*" (= I began to blink, *i.e.* sleep a little), *Baird*, 20. "Than tha wut *bloggy*" (= then thou wilt blog, *i.e.* look sullen), *Lock*, 16. "Tha wut . . . *bucklee* . . . (make wise) as ennybody passath" (= thou wilt buckle to, *i.e.* be active, in pretence, as anyone passeth), *Lock*, 17. "Chell . . . *capery* and zing" (= I will caper and sing), *Lock*, 30. "Tha desent *caree* who tha scullest" (= thou doesn't care whom thou scolest), *Lock*, 15. "Tha wut . . . *chewree* . . . (make wise) as ennybody passeth" (= thou wilt do household work in pretence if anyone passeth), *Lock*, 17. "Tha wut *chocklee* . . . ennybody" (= thou wilt chockle, *i.e.* hector and scold, anybody), *Lock*, 15. "Th' art so deeve as a haddick in *chongy* weather" (= thou art as deaf as a haddick in changy, *i.e.* changeable, weather), *Lock*, 11. "Nelly, my *chuckie*," *Rock*, 9. "Vrom all the worl' were I to *chusy*," *Rock*, 19. "The wut . . . *coltee* . . . wi' enny Kessen zoul" (= thou wilt act the hobby horse with any Christian soul, *i.e.* any human being), *Lock*, 17.

"Tha back o' tha *crippledy* vule" (= the back of the crippled fool), *Rock*, 33. "*Darney!* et es na use" (= Darn, i.e. D—n, it is no use), *Rock*, 10. "My *dearee*, good neart," *Palmer*, 36. "Thee wut . . . *doatee* in the chimly coander" (= thou wilt doat, i.e. nod the head in sleep, when sitting, in the chimney corner), *Lock*, 12. "Tha art half azlape, half *dozy*," *Lock*, 16. "Lock! dest *dwallee*" (= Heyday! dost dwaule or dwall, i.e. talk incoherently), *Lock*, 11. "Dest net *caree* to zay thy praers, but wut . . . *fibbee*," *Lock*, 16. "The river slow did *glidy* in," *Pulman*, 36. "It will ne'er *goodee* wi' they that did et" (= it will never do good to them who did it), *Palmer*, 36. "Dest thenk ennytheng will *goodee* or vitty?" "Well, bet *hearkey*, cozen Andra" (= well, but hark, cousin Andrew), *Lock*, 26. "Did . . . *hidy* close," *Pulman*, 47. "Et dith more good than *kautchy* vizzick" (= it doth more good than a kautch, i.e. a mess, of physic), *Rock*, 6. "Thy marra-bones shan't *kneelee*," *Lock*, 16. "After thy *leeky* broth" (= after thy leek broth, i.e. broth with leeks in it), *Rock*, 35. "Ha ded . . . *loustree*" (= he did lowster, i.e. stir about actively, or work hard), *Lock*, 14. "Tha wut *lustree*," *Lock*, 17. "Good now, *lovee*," *Palmer* 36. "Nelly . . . *mainy* to un" (= Nelly, mean to him, i.e. let him know your meaning or wish by some sign or look), *Rock*, 9. "Et began to *misee*" (= it began to misle, i.e. rain in very small drops), *Palmer*, 19. "Es marl ha don't *pointee*, what's in the meend o' en" (= I marvel he don't point, or indicate, what's in the mind of him), *Lock*, 30. "Thee wut *poochee*" (= thou wilt screw up thy mouth like a pouch), *Lock*, 13. "Hur used vor ha' a *poochy* way," *Rock*, 8. "Tha wut *purtee* a zennet arter" (= thou wilt purt, i.e. be silent or sullen, a sev'night after), *Lock*, 13. "Doant *quarley*, 'tis bet fun" (= don't quarrel, 'tis but fun), *Rock*, 13. "And wi' the zame tha wut *rakee* up" (= and with the same, i.e. suddenly, thou wilt rake, i.e. wake, up), *Lock*, 12. "Wut . . . *riggee* with enny trolubber" (= wilt rigg, i.e. act the wanton, with any common labourer), *Lock*, 16. "Why vor ded'st *roily* zo upon ma?" (= why for, i.e. why, did'st roil, i.e. rail, so upon me?), *Lock*, 7. "Git a mite o' *rubby* cawl" (= get a small quantity of rubble, i.e. small lumps of, coal), *Rock*, 9. "*Rucky* ta zich a thing!" (= ruck, i.e. crouch, to such a thing, or person), *Rock*, 25. "Thee wut *ruckee* . . . in the chimly coander" (= thee wilt crouch in the chimney corner), *Lock*, 12. "*Rucky* down quite low," *Pulman*, 51. "Up ha got and *ruckeyed* down," *Baird*, i. 58. "But moon, an' stars, an' *ryshy* lights" (= but moon, and stars, and rush lights), *Pulman*, 63. "Or in *scatty*

weather" (= or in showery weather, *i.e.* weather in which there is a succession of *scats*), *Lock*, 11. "Good for nort bet *scollee*, avore tha art a hoazed" (= good for nothing but scold, until thou art hoarse), *Lock*, 16. "Than tha wut *snappy*" (= then thou wilt snap, *i.e.* speak sharply), *Lock*, 16. "He murt . . . *soullly* tell he wos weary" (= he might soul, *i.e.* pull thee about, until he was weary), *Lock*, 21. "Tha wut *supdlee* out the yewmors" (= thou wilt spread or stir the embers with a little spud or poker), *Lock*, 15. "Thee wut . . . *squattee* . . . in the chimley coander," *Lock*, 12. "Thof ha ded . . . *twosee*" (= though he did toss and tumble), *Lock*, 14. "Zee'd tha whilere *trapesee* hum" (= saw thee a little while since trapes home), *Lock*, 12. "Es will ha' a *viggy* pudding on a Zinday" (= we will have a fig, *i.e.* plum, pudding on Sunday), *Palmer*, 59. "Thof ha ded *viggee*" (= though he did vig, *i.e.* dig with his feet), *Lock*, 13. "In tha *Vuzzey*-park, in tha desk of tha yeaveling" (= in the Furse-park in the dusk of the evening), *Lock*, 13. "Chell *whistley* . . . vor oll thee" (= I will whistle whether you like it or not), *Lock*, 30. "Zart! *whistery*!" (= soft! whisper!), *Lock*, 30. "Ha cum'd out like *winky*" (= he came out as quickly as one could wink), *Baird*, 17. "Thof things go *wrangy*" (= though things go wrong), *Rock*, 18. "Tha art a hoazed that tha cast scarce *yeppy*" (= thou art so hoarse that thou canst scarcely yelp, *i.e.* speak), *Lock*, 16. "Doant *zoundy* now" (= don't sound, *i.e.* swoon, now), *Rock*, 26. Though this list of illustrations is a long one, it might be greatly lengthened. W. P.]

304. "VINNY" and "VINNIED" are used about Ashburton and Torquay.

Palmer—"VINNIED. The green mould in cheese."

Rock—"VINHED. Moulded; mouldy as cheese (*gy.* from veined)." "I'll ha a crub wi *vinhed* chaise." p. 7. [= I'll have a crumb, or crust, or a small piece, of bread with mouldy cheese. W. P.]

Lock—"VINNIED, VINNAD. Finnewed; mouldy. From the Saxon *fynegian* or *fynig*, *mucidas*."

Pulman—"VINNID, or VINNY (A.S. *Finnie*, mouldy). 'Blue vinnid cheese,' to wit."

Moore—"VINNY. Mouldy."

Jennings—"VINNED. Mouldy; humoursome; affected."

Barnes—"VINNY, or VINNIED. A.S. *Finnie*, mouldy; from the A.S. *fenn*, wetness. Mouldy or mildewy from damp. 'Finie hlafas.' Mouldy loaves. *Josh.* ix. 5. 'The stuones

be *vinny*.' The stones are damp from condensed vapour.
'Blue *vinny* or *vinnied* cheese.' Blue mouldy Dorset cheese."

["VINNY" and "VINNIED" are used about Looe. W. P.]

Couch—"VINNIED. Mouldy. (*Fynig*, the past participle of *Fyngian*, to spoil, corrupt, decay.)"

Daniel—"They was *vinney'd* and rotten." *Wit.* p. 12.

Cooke—"VINNED. Mouldy; or humoursome when applied to children."

Grose—"VINNIED. Fenny; mouldy. *Exm.*"

305. "VISTEES" is used about Ashburton and Torquay.

Barnes—"Jim . . . thought s'd better trust
To lags than *vistes*."—*Poll's Jack Dd.*

Fox—"Ey 'll tame the ould Devel, afore et es long;
Ef Ey caant we ma *vistes*, Ey will we ma tongue."

Dolly, p. 46.

Sandys—"VEISTES. Fists."

Tregellas—"Bait un with my *vistes*."—*Peeps*, p. 103.

"He knawed moore 'bout using hes *vistes* than I ded."

Ibid., p. 134.

Verrall—"She up weth har two *vistes* and gov'n a bra'
tidy scat." *Exhib.* p. 64.

306. [See "VETTY" in Mr. Marshall's list. W. P.]

307. "VORE" is used about Ashburton and Torquay.

Baird—"Hur drade and shuv'd, both *vore* and back." i. 60.

"An walk'd hur strite *vorrid* down ta tha Gilhal." ii. 13.

Wolcot—"A fellow . . . comed *vore*." *Mid. Elect.*

Palmer—"VORE. Stand forward."

Rock—"VORE. Forward." "A longful while a moving
vore." p. 23.

Lock—"VOAR, VOOR, or VORE. Forth."

Pulman—"VORE. Forward; a-head; in front. 'The *vore*
(or leading) hoss.'"

["VORE" is used about Looe. W. P.]

Halliwell—"VORE. Forth."

Grose—"VORE. Forth. 'To draw *vore*,' to twit one with
a fault. *Exm.*"

308. "FORRED," or "VORRED," is used about Ashburton and Torquay as a name for the earth ploughed up near the hedge of a field and carted thence to spread over the field. It is perhaps the equivalent of Mr. Marshall's "VORRAGE."

309. "WANT" is used about Ashburton and Torquay.

Bowring—"The WANT." *Trans. Devon. Assoc.*, 1866, p. 18.

Palmer—"WANTS. Moles."

Rock—"WANT. A mole." "Poor *want-catcher* Ned." p. 31.

Pulman—"WANT. A mole. So WANT-KNAP. A mole-heap; and WANT-SNAP. A trap for the destruction of a very useful creature."

Moore, Cooke—"WANT. A mole."

Jennings—"WONT. A mole." "WONT-HEAVE. A mole-hill." "WONT-SNAP. A mole-trap." "WANT-WRIGGLE. The sinuous path made by moles under ground."

Williams—"WANT, WONT. A Mole."

Barnes—"WONT (A.S. *Wond*). A mole." "WONTHILL. A mole-hill; a mole-warp."

["WANT," "WANT-HILL," "WANT-CATCHER," "WANT-TRAP" are used about Looe. W. P.]

Couch—"WANT. A mole."

Marshall, 3—"WANT. A mole." "WANT-HILLOCKS. Mole-hills." *Eng. Dial. Soc.* B. 4.

Duncumb—"WOONT. A mole." *Ibid*, B. 12.

Ray, N.—"WANT. A mole; ab. A.S., *wand*, *talpa*." *Ibid*, B. 15.

N. & Q.—"WANT is derived from the Anglo-Saxon *wendan*, to turn, from its habit of turning up the soil. 'Molewarp' or 'Mold-warp,' another old name for the mole, is also still in use, and has a similar meaning, from the Anglo-Saxon verb *weorpan*, to cast. I have also heard this animal called in Dorsetshire . . . 'moodywant,' and what better title can it have than that of mould-turner?" 4th S. xi. 81. "WANT, as a name for the Mole, . . . as well as 'mouldwarp,' are in common use in Shropshire. The former is pronounced 'Oont,' and the latter 'Moudy-wort.'" *Ibid*, 145.

Hallivell—"WANT. A mole. In *MS. Sloane*, 2584, is a receipt 'for to take *wontis*.' Still in use."

Grose—"WANT. A mole. *North and var.* From the Saxon *Wand*." "WANTI-TUMP, ONTI-TUMP. A mole-hill. *Glouc.*"

310. "WARMING" is used about Ashburton and Torquay.

Baird—"I warn 'ee I'd warm up tha varmint a bit." i. 33.

Pulman—"WARM. To beat; to flog. 'I'll warm thee, if dissn be quiet.'"

["WARM" and "WARMING" are used about Looe. W. P.]

Hallivell—"WARM. To beat. *Var. dial.*"

311. "WHITAKER" is used about Ashburton.

Rock—"WHITTAKER. A species of quartz."

Moore, Halliwell—"WHITAKER. A species of quartz."

312. *Bray*—"Witchcraft is still devoutly believed in by most of the peasantry of Devon; and the distinctions (for they are nice ones) between a *witch* and *white witch*, and being bewitched, or only *overlooked* by a witch, crave a very careful discrimination." i. 37.

"WHITE-WITCH" is used about Ashburton and Torquay.

Baird—"Then up hur spauk—zeth hur, 'Wul, Jan,
I have a yerd thit thare's a man,
A *whit-witch* cal'd, in Exter Toun." i. 62.

Lock—"WHITWICH. A white witch; a conjuror; a good witch that does no mischief, unless it be in picking the pockets of those who are *no* conjurors, by pretending to discover the rogueries of others."

Pulman—"WHITE-WITCH. A man soothsayer; fortune-teller; reader of hidden mysteries; and general quack."

["WHITE-WITCH" is used about Looe. W. P.]

Grose—"WHIT-WITCH" (White-witch). A pretended conjuror, whose power depends on his learning, and not from a contract with the devil."

Dryden—"At best as little honest as he could,
And, like *white-witches*, mischievously good."

The Medal, lines 61-2.

313. "WINDELL" is used about Ashburton and Torquay.

Rock—"WINDLE. A fieldfare."

Pulman—"WIN'LE, WINDLE). The redwing (*Turdus iliacus*)."

Williams—"WIDDLE, WINDLE-THRUSH. Redwing."

["WINNARD" is used about Looe. W. P.]

Couch—"WINNARD. The redwing."

Daniel—"Knack down the *wennards* in desmal cowl'd weather." *Thalia*, p. 5.

Tregellas—"He awnly shot waun vilveer (fieldfare) and three *winnards*." *Peeps*, p. 92.

314. "WISHT" is used about Ashburton and Torquay.

Lake—"WISHT. Weak; sickly; unfortunate; pitiable. (? Witch'd). 'I zim her doth look very *wisht*.' 'It be the *wishest* thing I have seen for a long time.'"

Bowring—"A *wisht* is no longer a dismal, disagreeable man." *Trans. Devon. Assoc.*, 1866, p. 15.

Wilkey—"And cruel *wisht* did the poor veller look." p. 9.

Walcot—"Must look confounded *wish*." *Mid. Elect.*

Palmer—"WISHNESS. Melancholy."

Rock—"Ott vor dith luke sa *wisht*?" p. 13.

Pulman—"WISH. Dismal; moping; looking indisposed or melancholy. 'How *wish* you da look!'"

Moore—"WISH. Inapt; bad; unfit; as *wish* weather."

Williams—"WISH. Sad; untoward."

["WISHT" is used about Looe. W. P.]

Couch—"WISHT. Melancholy; forlorn. This word is so expressive that we have no English synonym to show its meaning. Browne, a Devonshire man, uses it—

'His late *wisht* had—I wist remorseful-bitinga.'

In Latimer's sermons it is apparently used as a noun. 'And when they perceived that Solomon, by the advice of his father, was anointed King, by and by there was all *whisht*, all their good cheer was done.' *Parker's Edit.* p. 115."

Daniel—"A *wishter* book I niver seed."—*Companion*, p. 13.

"A *wisht* poor job

As iver I did see."—*Ibid.* p. 17.

"'Weve come,' said Cappen Sam, 'an' thee
Do see two *wisht* ould fools in we.'"—*Ibid.* p. 28.

Forfar—"Fine an' *wisht*, esn't it, soas."—*Exhib.* p. 17.

"Tes *wished*, esn't it?"—*Ibid.* p. 127.

Sandys—"WISHED. Dull; melancholy; foolish."

Verrall—"The place looked *whisht*." *Exhib.* p. 45.

Halliwell—"WISHT. 'He's in a *wisht* state,' i.e. a state in which there is much to be *wished* for. *Devon*. A poor *wisht* thing, unhappy, melancholy, 'evil wished,' or evil looked upon."

315. "WISHNESS" is used about Ashburton and Torquay.

["WISHNESS," Melancholy, is used about Looe. W. P.]

Halliwell—"WISHNESS. Melancholy. *Devon*."

316. "WISTER-CLISTER" is used about Ashburton and Torquay.

Palmer—"WHISTER-CLISTER. 'Box in the ear.'"

Jennings, Williams—"WHISTER-TWISTER. A smart blow on the side of the head."

Halliwell—"WHISTER-CLISTER. A blow. *West*."

Grose—"WHISTERCLISTER. A stroke or blow under the ear. *Devonsh.*"

317. "YARK" is used about Ashburton and Torquay.

Halliwell—"YARK. Sharp; acute; quick."

318. "YAWS" is used about Ashburton and Torquay.

Rock—"YAW. An ewe."

Lock—"YEO. An ewe sheep."

Pulman—"Yo. A ewe."

Jennings—"Do ee mind the shee-ape, and the yeos an lams."

["YAW" is used about Looe, where a proverb describes a woman dressed too youthfully, as "an old yaw dressed up lamb fashion." W. P.]

Tregellas—"YAWS. Ewes."

"'Count every cat,' says Jinny, 'round and round,
Iss, rams and yaws, there caan't be twenty found.'"

Tales, p. 46.

Parish—"YEO [corruption of ewe]. From the Ang. Sax. *cowu*."

Burns—"An warn him, what I winna name,
To stay content wi yowes at hame."

Death and Dying Words of Poor Mailie. Lines 47-8.

"Her living image in her yowe,
Comes bleating to him, owre the knowe."

Poor Mailie's Elegy, st. 5.

"But the rapturous charm o' the bonnie green knowes,
Ilk spring they're new decked wi' bonnie white yowes."

Hey for a Lass wi' a Tocher, st. 2.

"His gear may buy him kye and yowes."

The Blude Red Rose at Yule may blow, st. 3.

"And there I had three score yowes."

Highland Widow's Lament, st. 3.

Halliwell—"YEO. An ewe. *Exm.*"

Groce—"YEO. An ewe. *Exm.*"

319. "YOKE" is used for *four* oxen about Ashburton, and a *pair* about Torquay.

Halliwell—"YOKE. A pair of oxen."

320. (See HEWING, also in Mr. Marshall's list.)

"YOWING" is used about Ashburton and Torquay.

Pulman—"YOWING" (pronounced to rhyme with *howing*).

Hewing. A peculiar mode of reaping—in a chopping style."

Williams—"Yow. To cut the stubble short; to cut with a hook."

Halliwell—"Yow. To reap, gathering the corn under the arm. *Devon.*"

321. "YOWL" is used about Torquay.

Wolcot—"By hunting horns and yowling boys." *Mid. Elect.*

Palmer—"YOWL. Howl."

Sandys—"YEWLING. Howling."

Tregellas—"YOWLING. Howling."

"And fiercer cats than they you'll never hear;
They're spitting, *yowling*, and the fur es flying."

Tales, p. 46.

Marshall, 1—"YOWL. To howl as a dog." *Eng. Dial. Soc.*
B. 2.

Harland—"YOWL. To howl." *Ibid*, C. 1.

Hutton—"YOWL. To yelp or howl." *Ibid*, B. 1.

Hallivell—"YOLE, YOWL. To yell; to bawl. Brocket has
yowl as still in use in the *North*."

Groce—"YOWL. To cry, or howl, as a dog. *North*."

322. "ZAMZAWED" is used about Ashburton for food *overcooked*; and about Torquay for *lukewarm* food.

Palmer—"ZAMZAWED. Overdone."

Rock—"SAMSAWED. Half-cooked."

Pulman—"ZAM-ZOD, or ZAM-ZAWDEN. Sodden, spoiled in
boiling."

Jennings—"ZAM. To heat for some time over the fire
but not to boil." "ZAMZOD, ZAMZODDEN. Anything heated
for a long time in a low heat so as to be in part spoiled, is
said to be *Zamzodden*. Conjecture in etymology may always
be busy. It is not improbable that this word is a compound
of *semi*, Latin, half; and to seethe, to boil: so that ZAM-
ZODDEN will then mean, literally *half boiled*."

Williams—"ZAM-SOD, ZAM SODDEN. Half baked."

["ZAMZODDEN" is used about Looe for overcooked food.
A *Zam*-oven or *Sam*-oven is one partly cooled; an oven
retaining sufficient heat after the larger joints or dishes are
drawn, to bake small articles. W. P.]

Couch—"SAM or ZAM. Half or imperfectly done. A *sam*
oven is one half heated. SAM-SODDEN means half-sodden or
parboiled. To leave the door a *zam* is to half close it. The
softer *z* is common in this word."

Hallivell—"ZAM. To parboil. *West. Cold. Devon*. ZAM-
SAUDEN. Applied to anything spoilt by cooking."

323. "ZOGGING" or "SOGGING" is used about Ashburton
and Torquay.

Palmer—"ZOGGING. Same as dozing."

Rock—"SUGG. To sleep." "Dame Voord'll *sug* a bit ner
chair." p. 8.

Garland—"SOG. Half asleep; a *dwawm*."

Hallivell—"ZOG. To doze. *Devon*."

[P.S. Whilst the foregoing sheets were passing through the press, I learnt from two friends—one of whom spent his childhood at Liskeard, in Cornwall, and the other at Launceston in the same county—that a “CATTEBALL” (No. 28), instead of being the same thing as a *Tacky ball*, as I supposed (see Note 28), is used in the following game or amusement:—The ball is thrown on a penthouse, or some other low, roof, or, in the absence of a suitable roof, against a wall, and caught in its descent to the ground, or, if missed then, at its first re-bound (locally *Glance* or *Glansh*) from it. The skill of the player is displayed by the number of times the ball is thus caught. Both my friends are of opinion that “CATTEBALL” is a corruption of CATCHY-BALL, or CATCH-A-BALL. I have no recollection of this game about Looe.

Friends, in both Devon and Cornwall, have suggested to me that Miss Fox's Kingsbridge word “DRATCH” (No. 74) is nothing more than a typographical error for DATCH. It happened, however, that when recently on a visit near Kingsbridge, I heard the word “DRATCH” used, and was informed by residents that it was the invariable local equivalent of DATCH.

It cannot be necessary to remark that several of the so-called *Provincialisms* do not really belong to that category. W. P.]

THE FOLK-LORE OF DEVONSHIRE.

BY H. J. KING, M.A.

(Read at Torrington, July, 1875.)

THE Devonshire Association, at the annual meeting of 1875, appointed a committee for the collection of Folk-lore relating to the county. It was determined that such collections should be printed in the volume of *Transactions*, under the editorship of Mr. Richard John King.

It is much to be hoped that all members of the Association will lend their assistance toward so good a purpose. Under the term "Folk-lore," a great variety of subjects is included. Local stories, popular tales, rhymed sayings, charms and proverbs, unusual customs, and above all, direct superstitions, such as have reference to the ancient belief in elves, pixies, and "whish hounds," should all be carefully gathered. These bear directly on the "heathendom" of our Saxon ancestors; and it is impossible to say how much light may be thrown by them on questions and details of early history with which at first sight they may seem little connected.

The following notice was communicated to the meeting at Torrington by Mr. Paul Q. Karkeek:

THE JUDAS STEAK.

While riding on the coach which runs between Dartmouth and Kingsbridge, through Slapton Sands and Torcross, I overheard the following conversation:

The Driver, to a passenger who had joined the coach at Torcross: "Well, how about that Judas steak?"

Passenger: "I forgot all about it; but you shall have that from the next beast I kill."

I enquired of the driver, What sort of steak? and he said, "A Judas steak." The passenger, hearing me ask the ques-

tion, said, "A Judas steak is the best in the bullock. The fat runs all around the lean even and regular ; and, besides, it is the best bit of meat going."

I asked him, Why is it called a Judas steak ? and he said that he didn't know ; that it had always been called so in his memory, and that he could sell twenty for every one he had to sell. It was a favourite part, and fetched more money. Query, Why so called, and is it known by this name elsewhere?

In the discussion which followed, Mr. Gill of Tiverton, and the Rev. H. Fowler of Torrington, stated that they had frequently heard of this Judas steak, but could give no derivation for the name. It appeared that at Torrington the name is applied to a particular joint which looks much better than it really is, since it is chiefly made up of concealed bone ; in short, a "traitorous" joint.

NOTES ON THE MARINE CONCHOLOGY OF TORBAY,

WITH LIST OF SPECIES COLLECTED 1874-5.

BY D. PIDGEON.

(COMMUNICATED BY MR. PENNELL.)

(Read at Torrington, July, 1875.)

THE winter of 1874-5 was spent by the writer on the shores of Torbay, and the following list of shells collected by him together with notes on their habitats, is offered to the Association in the hope that it may prove locally interesting.

The district examined was confined to Torbay, or the semi-circle of sea and shore contained between Berry Head and Hope's Nose; but two species, abundant in the neighbourhood, procured from the Brixham trawlers, have been admitted. The remainder were collected personally, with the exception of some half-dozen species, noted in the list, for a knowledge of whose occurrence in the bay the writer is indebted to the kindness of his friend Mr. A. R. Hunt, of Torquay, who has dredged assiduously in Torbay for some years past.

All the more difficult species were submitted to Mr. Gwyn Jeffreys, whose kind attention and assistance the writer gratefully acknowledges. Two or three species remain for the present undetermined, in consequence of Mr. Jeffreys' departure with the Arctic Expedition; but it is hoped that these may be communicated on some future occasion.

Collecting was carried on by dredging, shore collecting, and weed-washing. The last process is strongly recommended to shell collectors on this coast, where the rocks at extreme low water abound in the smaller species of *Rhodospiræ*.

The dredge reveals considerable variety of bottom, but little of depth, over the area of Torbay. Hard ground is found off

the Oar Stone, Thatcher, Elbury, Brixham, Roundham Head, and here and there in the Bay itself, which, however, is chiefly occupied by muddy sand and mud. The depth of water is uniformly about six fathoms, but a large pit-like depression occurs near the Oar Stone, with soundings in fourteen fathoms. A great accumulation of dead shells of all kinds covers the floor of "the pit," and the place generally rewards a haul. At one spot near the Thatcher, star-fish of the genus *Ophiocoma* are so numerous as to choke the bag in the course of a few minutes. Hard ground, in eighteen fathoms, is found just outside Berry Head.

The distribution of species over this area is indicated in the notes accompanying the list of shells, and need not be dwelt on here, further than to draw attention to both the rarer and more abundant forms which characterize Torbay.

The muddy sand off Daddy-hole plain undoubtedly abounds in *Thracia convexa* (the "golden hen" of the fishermen); but it is very seldom obtained on account of its burrowing habits. In February of this year, however, it occurred to the writer in comparative abundance for several days together after heavy weather from the eastward. It was taken in the prawn trawl—a kind of dredge without a cutting edge, which rakes over, but does not penetrate, the surface of the ground. The shells were all dead, but had only recently lost their tenants, and it was clear that their presence was due to disturbance of the ground caused by the gales. The burrowing habit of *Thracia convexa* is well illustrated by its capture, living and in some abundance, by my friend Capt. Bedford, R.N., in masses of stiff clay brought up on the flukes of his anchor when weighing off Mull.

Odostomia fenestrata, *Rissoa vitrea*, and *R. proxima* were met with—the first living the two latter dead—in the muddy sand of the bay. Mr. A. R. Hunt reports the occurrence of *Lutraria oblonga* in a recent dredging. This is an uncommon species which has not been found in Torbay by the writer.

Pleurotoma attenuata is occasionally obtained; and *P. lævigata*, associated with *P. nebula*, lives in the muddy sand off Elbury. *Scalaria Turtonis* is not unfrequently met with living on the hard ground, Brixham side of the bay; but the commoner *S. communis* is rarely seen. *Bulla hydatidis* frequents the muddy sand off Elbury in autumn, but is not found there in winter.

In shore collecting, perhaps the greatest treasure is *Aolis unica*, which may be taken living at the roots of dwarf sea-

weeds on the sandstone reefs a few hundred yards east of Paignton harbour; while *Ocostomia dolioformis*, *O. insculpta*, *O. diaphana*, *O. Warreni* and *O. obliqua*, all rarities, are found at home in the same quarters. *Pholadidea papyracea* occurs sparingly in all stages of growth wherever the softer sandstones coincide with extreme low water of spring-tides. The best locality for this shell is a sandstone reef some little way south of Goodrington sands. In the same place *Arca tetragona* and *Venerupis irus* find shelter—the former in soft sandstone, the latter in both limestone and sandstone.

One example of *Modiolaria costulata* was found living among dwarf red weed growing in rock pools at Goodrington, and *M. discors* occurred three or four times adherent to stones. *Arca lactea*, *Fissurella græca*, *Lamellaria perspicua*, *Defrancia purpurea*, *Ocostomia lactea*, and *O. pusilla*, all live habitually under stones about the same prolific spot; while the weeds are thickly tenanted by *Phasianella pulla*, *Rissoa parva*, *R. fulgida*, *R. inconspicua*, and *R. semistriata*. *Rissoa striata* is here found in colonies on the under sides of stones. Mr. Hunt reports *Pleurobranchus membranaceus* as an occasional winter visitor, notably in 1873–4, when it swarmed in Torbay.

With regard to the more abundant forms of the locality, it would appear that *Macra subtruncata* is the most numerous of any. This species lives in countless myriads in the muddy sand of the bay and between tide marks; whilst every heavy gale from the east strews the shore thickly with its shells. The writer saw them, after the easterly gales of last winter, lying inches thick along the greater part of Goodrington sands.

Lutraria elliptica is very abundant, living in sand at low tide; *Cardium aculeatum* and *tuberculatum* are numerous; while *Natica catena* and very large *Philine aperta* come up plentifully after storms. In the early spring the sands near Paignton harbour are sometimes thickly strewn with the ribbon-like spawn of *Natica catena*.

Donax vittatus is a common species, living in the sand, and generally carrying here a curious mark of distinction. Small tufts of green ulva are frequently met with between tide-marks, growing apparently out of the sand, and these on examination, are found to be rooted on the shells of *Donaces*, whose cool retreats are thus revealed alike to shell-collectors and sea birds, the latter keen as man to detect the sand-dwelling *conchifers*.

Oysters have been too much dredged to be abundant in Torbay; pectens are not common; and all the mussels used

by fishermen are brought from the Teign or Dart. The common whelk is abundant and fine; but *Fusus islandicus* and *F. buccinatus*, which are both pretty frequently met with, are always dead.

Mr. Gwyn Jeffreys' *British Conchology* gives the following numbers as comprising all the known species of British marine shells:

Brachiopoda	6
Conchifera	158
Gasteropoda	242
Total	406

Of these seventy-nine are essentially northern forms, and six are confined exclusively to the Channel Islands.

A winter resident's casual labours, during a somewhat stormy season, around the shores and in the waters of Torbay, have certainly not exhausted its treasures, though they have produced as follows:

Brachiopoda	0
Conchifera	88
Gasteropoda	121
Total	209

being a little over two-thirds of all the shells which are common to the North and South of Britain, and rather more than half of the whole British list.

Mr. Parfitt's excellent and laborious paper on the "Fauna of Devon," communicated to the Association in 1874, undoubtedly sets the abundance of marine life on your favoured shores in a very powerful light, and the writer's experience inclines him to think that there is probably no locality where the shell-collector is more richly rewarded for his pains than in this beautiful Devonshire bay.

With these few introductory remarks, which touch shortly on the chief features of Torbay Conchology, the list of species is submitted to your consideration.

LIST OF MARINE SHELLS COLLECTED IN TORBAY,

1874-75.

WITH REMARKS ON THEIR HABITATS.

Class, CONCHIFERA.

Order, LAMELLIBRANCHIATA.

Fam., ANOMIIDÆ.

ANOMIA EPHIPPIMUM.

Common; living. Adherent to rocks, low tide, and to stones and shells of *Pecten maximus* in the bay.

A. PATELLIFORMIS.

A single specimen; living. Dredged off Brixham.

Fam., OSTREIDÆ.

OSTREA EDULIS.

Sparingly; living. In the bay, of large size, and from the Brixham trawlers.

Fam., PECTINIDÆ.

PECTEN PUSIO.

Common; living. Adherent to rocks, low water, spring tides; rarely dredged.

P. VARIUS.

Common; living. Adherent to rocks, low water, spring tides; rarely dredged.

P. OPERCULARIS.

Sparingly; living. In the bay; abundant from the trawlers.

P. MAXIMUS.

Sparingly; living. In the bay; abundant from the trawlers.

LIMA LOSCOMBII.

Very scarce; dead. One valve dredged in the bay.

Fam., AVICULIDÆ.

PINNA RUDIS.

Abundant; living. From the trawlers.

Fam., MYTILIDÆ.

MYTILUS EDULIS.

Sparingly; living. In the bay, and small; abundant in the Dart and Teign. The Paignton fishermen try to encourage their growth in colonies at Paignton harbour, but without great success.

M. MODIOLUS.

Occasionally; living. Dredged in the bay.

M. BARBATUS.

Common; living. Attached to rocks, low water, spring tides, at Goodrington rocks.

M. ADRIATICUS.

Rare; living. Dredged in the bay.

MODIOLARIA MARMORATA.

Common; living. In skins of *Ascidians*; dredged in the bay; but always small shells.

M. COSTULATA.

Rare; living. One specimen taken among weed, low water, spring tides, at Goodrington rocks.

M. DISCORS.

Rare; living. Two or three specimens taken among weed, low water, spring tides, at Goodrington rocks.

Fam., ARCIDÆ.

NUCULA NUCLEUS.

Common; living. Dredged all over the bay on soft bottom.

N. NUCLEUS V. RADIATA.

Common; living. Dredged all over the bay on soft bottom.

PECTUNCULUS GLYCIMERIS.

Abundant; living. From the trawlers.

ARCA LACTEA.

Common; living. In holes of rocks, low water, spring tides, Goodrington.

A. TETRAGONA.

Sparingly; living. Extreme low-water mark, Goodrington, in the softer sandstones, and inhabiting holes which

closely fit the shape of the shell, firmly attached to such holes by a strong green byssus.

Fam., KELLIIDÆ.

LASEA RUBRA.

Not common; living. In the deserted cases of acorn barnacles, at high-water mark, Livermead.

KELLIA SUBORBICULARIS.

Common; living. In holes in stones dredged in the bay, and in holes and crevices of rock, low tide.

MONTACUTA BIDENTATA.

Rare; living. One specimen dredged in the bay, identified by Mr. Jeffreys.

Fam., LUCINIDÆ.

AXINUS FLEXUOSUS.

Common; dead. In muddy sand off Elbury, Daddy-hole, &c.

DIPLODONTA ROTUNDATA.

Obtained by A. R. Hunt, Esq., in the bay.

Fam., CARDIIDÆ.

CARDIUM ACULEATUM.

Abundant; living. Off Paignton, but difficult to procure in good order; thrown up by storms very abundantly, Goodrington and Paignton sands.

C. ECHINATUM.

Common; living. Dredged in the bay, and thrown up by storms very abundantly, Goodrington and Paignton sands.

C. TUBERCULATUM.

Common; living. Dredged in the bay, and thrown up by storms very abundantly, Goodrington and Paignton sands.

C. FASCIATUM.

Occasionally. In the bay.

C. EDULE.

Scarce; living. In Paignton harbour, and thrown ashore.

C. EXIGUUM.

Occasionally; living. Dredged in the bay.

C. NODOSUM.

Occasionally; living. Dredged in the bay, always small.

C. NORVEGICUM.

Abundant; living. Dredged off the Oar Stone, of all ages.

Fam., CYPRINIDÆ.

CYPRINA ISLANDICA.

Scarce; living. Dredged by A. R. H., and broken shells picked up on Paignton sands.

ASTARTE TRIANGULARIS.

Rare; dead. One valve dredged in 18 fathoms off Berry Head.

Fam., VENERIDÆ.

VENUS EXOLETA.

Scarce; dead. Dredged off Thatcher.

V. FASCIATA.

Common; living. Dredged off Thatcher.

V. OVATA.

Common; dead. Dredged off Oar Stone and Thatcher; seldom alive or double.

V. GALLINA.

Common; living. In sand, low tide, Paignton and Goodrington.

V. CASINA.

Scarce; living. Dredged by A. R. H. in the bay.

V. CHIONE.

Scarce; living. Dredged by A. R. H. in the bay.

V. LINCTA.

Scarce; dead. Valves from the trawlers; rare in the bay.

TAPES VIRGINEUS.

Common; living. Dredged off Thatcher, Oar Stone, and Brixham.

T. PULLASTRA.

Common; living. Everywhere.

T. PULLASTRA V. PERFORANS.

Common; living. In holes of rocks and stones, low water, spring tides; general.

T. DECUSSATUS.

Common; living. Thrown up, and dredged in the bay.

LUCINOPSIS UNDATA.

Common; living. In sand; thrown up abundantly after storms, Paignton sands.

*Fam., TELLINIDÆ.***TELLINA CRASSA.**

Common; dead. Numerous valves dredged in the bay; seldom double; never alive.

T. TENUIS.

Common; living. In sand, Paignton, Goodrington, between tide-marks.

T. FABULA.

Scarce; living. In sand, Paignton, Goodrington, between tide-marks.

T. SQUALIDA.

Occasionally; dead. Dredged in the bay on muddy sand.

T. DONACINA.

Not common; living. Dredged off Thatcher on gravel.

T. BALTHICA.

Scarce; living. In the mud of Paignton harbour; never dredged or thrown up.

PSAMMOBIA TELLINELLA.

Common; living. Dredged off Oar Stone, abundant, of all ages, brilliantly coloured, on hard ground.

P. FERROËNSIS.

Common; living. Dredged in the bay, and thrown up on Paignton sands.

P. VESPERTINA.

Scarce; living. Dredged by A. R. H.

DONAX VITTATUS.

Very common; living. In sand between tide-marks, Paignton and Goodrington.

*Fam., MACTRIDÆ.***MACTRA SOLIDA.**

Scarce; dead. Dredged in the bay.

M. SUBTRUNCATA.

Most abundant; living. In sand between tide-marks, Paignton and Goodrington; thrown up by storms in countless myriads; dredged very abundantly in the muddy sand of the bay off Paignton, Elbury, &c.

M. STULTORUM.

Common; living. In sand between tide-marks, Paignton and Goodrington.

M. STULTORUM V. CINEREA.

Scarce; living. Dredged off Brixham.

LUTRARIA ELLIPTICA.

Common; living. In sand; thrown up by thousands, Paignton and Goodrington sands, after storms.

L. OBLONGA.

Rare; living (?). Dredged by A. R. H., June, 1875.

SCROBICULARIA PRISMATICA.

Rare; living (?). In muddy sand off Elbury; single specimen.

S. ALBA.

Common; living. In muddy sand off Elbury.

S. PIPERATA.

Scarce; dead. Occasionally thrown up dead; probably derived from the Dart or Teign.

Fam., SOLENIDÆ.

SOLECURTUS ANTIQUATUS.

Scarce. Dredged by A. R. H.

SOLEN PELLUCIDUS.

Common; living. Dredged generally in the bay in mud.

S. ENSIS.

Common; living. Thrown up everywhere.

S. SILIQUA.

Common; living. In sand between tide-marks.

S. VAGINA.

Not uncommon; living. Thrown up everywhere after storms.

Fam., ANATINIDÆ.

THRACIA PAPYRACEA.

Common; dead. Dredged generally in the bay; often double, but rarely living.

T. CONVEXA.

Rare; living and dead. Off Daddy-hole. This shell is seldom dredged, and is very rarely found alive. In February, 1875, however, for several days after some heavy weather, the prawn trawl brought up quite a number, but all dead.

T. DISTORTA.

Common; living. In holes of stones, both low tide and in stones dredged in the bay.

T. VILLOSIUSCULA.

Occasionally; dead. Dredged in the bay.

*Fam., CORBULIDÆ.***CORBULA GIBBA.**

Common; living. Dredged in the bay, generally on muddy sand.

C. GIBBA V. ROSEA.

Occasionally; living. Dredged in the bay, generally on muddy sand.

*Fam., MYIDÆ.***MYA TRUNCATA.**

Common; dead. Dredged in the bay; rarely living.

M. BINGHAMI.

Rare; living. Three specimens dredged in stones off the Oar Stone.

*Fam., SAXICAVIDÆ.***SAXICAVA RUGOSA.**

Common; living. In all the limestones and harder sandstones of the bay.

S. RUGOSA V. ARCTICA.

Common; living. Dredged generally adhering to oyster-shells.

VENERUPIS IRUS.

Scarce; living. In soft sandstone, low-tide mark, Goodrington; and (dead) in hard rolled limestone from Elbury beach.

GASTROCHÆNA DUBIA.

Common; living. Dredged in hard limestone. Occurs commonly in the pools in limestone rocks at Babbicombe, nearly at high-water mark. Several specimens from trawlers, with an artificial crypt.

PHOLAS DACTYLUS.

Common; dead. In all the softer sandstones of the bay, but seldom or never living.

P. CANDIDA.

Common; living. In the sunk forest, Tor Abbey Sands.

P PARVA.

Common; living. In the softer sandstones of the bay.

PHOLADIDEA PAPYRACKA.

Not uncommon; living. In the softer sandstones, at extreme low tide, in all stages of growth. At Goodrington and Paignton, specimens were taken with the gape open; with the gape closed, and cups formed; and with gape closed, but cups not formed.

*Fam., TEREDINIDÆ.***TEREDO NORVEGICA.**

Common; living. Sunk forest, Tor Abbey Sands; and Oakposts, Livermead.

T. NAVALIS (?).

Sunk forest, Tor Abbey Sands.

XYLOPHAGA DORSALIS.

Rare; living. In small pieces of wood picked up on the shore after storm at Goodrington.

*Class, SOLENOCONCHIA.**Fam., DENTALIIDÆ.***DENTALIUM ENTALIS.**

Not common; living. On two occasions in dredge off Thatcher; rarely thrown up.

D. TARENTINUM.

Rare; dead. Dredged in the bay.

Total Conchifera 88

*Class, GASTEROPODA.**Order I. CYCLOBRANCHIATA.**Fam., CHITONIDÆ.***CHITON FASCICULARIS.**

Common; living. On rocks, low-tide mark, Paignton.

C. CINEREUS.

Common; living. Dredged on stones in the bay generally.

C. LÆVIS.

Rare; living. One specimen, low-tide mark, Paignton.

C. HANLEYI.

Rare; living. A group of five on one occasion, and two on another. Extreme low water, under stones, Goodrington.

C. MARGINATUS.

Common; living. On flat stones, half-tide, Goodrington.

C. CANCELLATUS.

Once only; living. On rocks, extreme low tide, Goodrington.

Order II. PECTINIBRANCHIATA.
Fam., PATELLIDÆ.

PATELLA VULGATA.

Common; living. Everywhere. Very large at Benjamin's Bower; beautifully-coloured varieties of F. & H.'s "*Athletica*" at Paignton. The variety *Elevata* is found at Dartmouth.

HELCION PELLUCIDUM.

Common; living. On tangle.

H. PELLUCIDUM V. LÆVIS.

Common; living. In roots of tangle.

TECTURA VIRGINEA.

Common; living. Low spring-tides, on rocks, Babbicombe, Goodrington, &c.

Fam., FISSURELLIDÆ.

EMARGINULA FISSURA.

Common; living. Dredged off Thatcher, Oar Stone, and Brixham.

E. ROSEA.

Scarce; living. Dredged off Thatcher, Oar Stone, and Brixham.

FISSURELLA GRÆCA.

Common; living. On rocks, low spring-tide, Goodrington and Paignton.

CAPULUS HUNGARICUS.

Common; living. From the Brixham trawls, dredged off Oar Stone.

Fam., TROCHIDÆ.

CYCLOSTREMA SERPULOIDES.

Very rare; living. Under sides of stones, low water, spring-tides, Paignton.

TROCHUS MAGUS.

Common; living. Dredged off Thatcher and Oar Stone.

T. TUMIDUS.

Common; living. Dredged off Thatcher and Oar Stone; one specimen under stone, low tide.

T. CINERARIUS.

Common; living. Shore generally.

T. UMBILICATUS.

Common; living. Shore generally.

T. LINEATUS.

Common; living. Locally abundant every here and there, at Galmpton point in particular.

T. MONTACUTI.

Scarce; living. Dredged off Oar Stone; more abundant in trawl rubbish.

T. STRIATUS.

Very common; living. On *Zostera* dredged off Elbury and Brixham.

T. ZIZIPHINUS.

Very common; living. On rocks at low-tide mark; general.

ZIZIPHINUS V. LYONSII.

Not uncommon; living. Off Oar Stone, and from the trawlers.

Fam., **TURBINIDÆ.**

PHASIANELLA PULLA.

Abundant; living. Among red weeds growing at low-water mark on rocks, Goodrington, and weeds dredged off Brixham.

Fam., **LITTORINIDÆ.**

LACUNA DIVARICATA.

Abundant; living. On *Zostera* dredged off Brixham and Roundham Head; small.

L. PUTEOLUS.

Sparingly; living. On green weed growing on rocks low-tide mark.

L. PALLIDULA.

Rare; dead. Thrown up sometimes on Goodrington Sands.

L. PALLIDULA V. PATULA.

Occasionally; living. Among weeds, high-tide line, Maidencombe.

LITTORINA OBTUSATA.

Common; living. Everywhere on weeds.

L. NERITOIDES.

Common; living. At high-tide line everywhere, but differing immensely in size at various places; very large under Roundham Head.

L. RUDIS.

Common; living. On rocks everywhere; several of the varieties are found.

L. LITOREA.

Common; living. On rocks everywhere; several of the varieties are found.

RISSEO PUNCTURA.

Rare; living. On stones dredged in the bay.

R. COSTATA.

Scarce; dead. Rather abundant among stuff dredged at the moorings of the Brixham trawls.

R. CANCELLATA.

Rare; dead. Two specimens on oyster-shells from Brixham.

R. PARVA.

Abundant; living. Among weeds, low tide.

R. PARVA V. INTERRUPTA.

Common; living. On weeds, low tide.

R. MEMBRANACEA.

Common; living. On *Zostera* dredged off Elbury and Brixham.

R. STRIATA.

Common; living. Under stones at low tide (gregarious).

R. PROXIMA.

Rare; dead. Dredged in muddy sand off Daddy-hole.

R. VITREA.

Rare; dead. Dredged in muddy sand off Daddy-hole, with *R. proxima*.

R. FULGIDA.

Common; living. Crowding small red weed at low tide in countless numbers.

R. SEMISTRIATA.

Common; living. Among weeds, low tide.

R. CINGILLUS.

Rare; living. Among weeds, low tide.

R. INCONSPICUA.

Common; living. Among weeds, low tide.

R. INCONSPICUA V. VARIEGATA.

Common; living. Among weeds, low tide.

R. COSTULATA.

Common; living. Among weeds, low tide.

HYDROBIA ULVÆ.

Rare; dead. Thrown on shore; evidently derived from some neighbouring estuary, probably Salcombe. This shell is abundant fossil, or semi-fossil, in parts of the sunk forest, Paignton Sands.

Fam., SKENEIDÆ.

SKENEA PLANORBIS.

Very rare; living. Among weeds, low tide.

Fam., TURRITELLIDÆ.

TURRITELLA TEREBA.

Abundant; living. Dredged off Berry Head and Brixham; small in the bay, but larger outside. Variety thrown up on Paignton Sands.

T. TEREBA V. NIVÆA.

Occasionally; dead. Dredged off Berry Head and Brixham; and thrown up on Paignton Sands.

Fam., TRUNCATELLIDÆ.

TRUNCATELLA TRUNCATULA.

Rare; dead. In shell sand thrown up on Tor Abbey Sands, probably derived from Salcombe.

Fam., SCALARIIDÆ.

SCALARIA COMMUNIS.

Rare; dead. Occasional fragments in the bay.

S. TURTONÆ.

Not uncommon; living. Dredged off Elbury.

S. CLATHRATULA.

Rare; dead. Dredged on stones in the bay.

Fam., PYRAMIDELLIDÆ.

ACLIS UNICA.

Rare; living. This rather rare shell lives among dwarf weeds, at low water of spring-tides, on the reefs by Paignton harbour. Six living specimens were found at one washing, and two at another. The weeds were taken with the sandy soil lying about their roots.

ODOSTOMIA SPIRALIS.

Common; living. On weeds at low water, spring-tides.

O. PALLIDA.

Common; living. Parasitic on ears of *Pecten opercularis*, and very abundant.

O. ACUTA.

Common; living. On weeds at low tide.

O. UNIDENTATA.

Common; living. Under stones at low tide, and nestling among *Serpula* tubes incrusting *Helcion pellucidum*, from tangle.

O. TURRITA.

Common; living. Among weeds, low tide, and as above.

O. INSCULPTA.

Rare; living. Among weeds, low tide, and dead on stones dredged.

O. DOLIOFORMIS.

Rare; living. Among weeds, low tide, the reefs, Paignton harbour.

O. INDISTINCTA.

Rare; dead. On stones dredged off the Oar Stone.

O. INTERSTINCTA.

Rare; dead. On stones dredged off the Oar Stone.

O. FENESTRATA.

Common; living. Among muddy sand in six fathoms in the bay.

O. SCALARIS.

Rare; living. One specimen on stones dredged in the bay.

O. LACTEA.

Not uncommon; living. On rocks at low water of spring-tide, Goodrington.

O. PUSILLA.

Rare; living. On rocks at low water of spring-tide, Goodrington.

O. DECUSSATA.

Rare; dead. On stones dredged in the bay.

O. PLICATA.

Rare; living. On weeds, low tide; oftener dead than living.

O. OBLIQUA.

Rare; living. On weeds, low tide.

O. WARRENI.

Occasional ; living. On weeds, low tide.

O. UMBILICARIS (?).

Very rare ; living. One specimen among weed, low tide.

O. ACICULA.

Very rare ; living. Two specimens dredged alive off Brixham.

O. DIAPHANA.

One specimen ; dead.

Fam., EULIMIDÆ.

EULIMA POLITA.

Not common ; living. Off Oar Stone ; usually dead.

E. DISTORTA.

Not common ; living. Dredged in some number on one occasion on stones off Berry Head ; never subsequently found.

E. SUBULATA (?).

Rare ; living. One specimen taken alive, and lost almost immediately. On stones off Berry Head.

E. BILINEATA.

Rare ; living. On stones off Oar Stone.

Fam., NATICIDÆ.

NATICA CATENA.

Common ; living. On Paignton Sands.

N. ALDERI.

Rather common ; living. On gravel in the bay, and occasionally thrown up.

Fam., SOLARIIDÆ.

ADEORBIS SUBCARINATA.

Scarce ; dead. On stones dredged off Berry Head in eighteen fathoms.

Fam., VELUTINIDÆ.

LAMELLARIA PERSPICUA.

Common ; living. On rocks at low tide, and on stones dredged.

VELUTINA LÆVIGATA.

Dredged by A. R. H.

OTINA OTIS.

Rare ; dead. One or two specimens in shell sand, Tor Abbey Sands.

Fam., APORRHAIIDÆ.

APORRHAIIS PES-PELICANI.

Common; living. Dredged on gravel off Oar Stone.

Fam., CERITHIIDÆ.

CERITHIUM RETICULATUM.

Common; living. Among weeds, low tide, but attaining no great size.

C. PERVERSUM.

Rare; living. Among weeds, low tide, Paignton reefs.

Order III., SIPHONOBANCHIATA.*Fam.*, CERITHIOPSIDÆ.

CERITHIOPSIS TUBERCULARIS.

Rather common; living. Among weeds at low tide.

Fam., BUCCINIDÆ.

PURPURA LAPILLUS.

Common; living. Everywhere.

P. LAPILLUS V. MAJOR.

Common; living. Paignton.

BUCCINUM UNDATUM.

Common; living. General in the bay. Attaining a large size.

Fam., MURICIDÆ.

MUREX ERINACEUS.

Common; living. On the rocks at low tide; general.

LACHESIS MINIMA.

Common; living. Among dwarf weeds at low tide.

TROPHON MURICATUS.

Rare; dead. From trawl rubbish.

FUSUS ISLANDICUS.

Rare; dead. Washed ashore and dredged; never living.

F. BUCCINATUS.

Dredged by A. R. H. Dead.

F. PROPINQUUS.

Dredged by A. R. H. Dead.

Fam., NASSIDÆ.

NASSA RETICULATA.

Common; living. In the sand of all the bays.

N. INCRASSATA.

Common; living. Under stones at low tide, among rocks.

N. PYGMÆA.

Common; living. On ulva dredged in the bay.

Fam., **PLEUROTOMIDÆ.****DEFRANCIA GRACILIS.**

Rather common; living. On gravel bottom off the Oar Stone.

D. LEUFROYI.

Rare; living. One specimen dredged off Thatcher.

D. LINEARIS.

Not uncommon; living. On rocks, low tide, Paignton, and dredged dead off Thatcher.

D. PURPUREA.

Not uncommon; living. On rocks, low tide. This shell is gregarious. Three were found together in a hole on one occasion, and two together several times.

PLEUROTOMA ATTENUATA.

Rare; living. Dredged off Oar Stone and Elbury.

P. COSTATA.

Not uncommon; alive. Among weeds at low tide, and dredged dead.

P. NEBULA.

Common; living. In muddy sand off Elbury, Brixham, and Daddyhole.

P. LÆVIGATA.

Rare; living. With *Nebula*.

P. SEPTANGULARIS.

Sparingly; dead. Dredged off the Oar Stone.

Fam., **CYPRÆIDÆ.****CYPRÆA EUROPEA.**

Common; living. On rocks at low tide, under stones.

OVULA PATULA.

Rare; living. Dredged off Oar Stone by A. R. H., and from the trawlers.

Order IV., **PLEUROBRANCHIATA.***Fam.*, **BULLIDÆ.****CYLICHNA CYLINDRACEA.**

Rare; dead. Only one small specimen was taken in eighteen fathoms off Berry Head.

UTRICULUS OBTUSUS.

Rare; living. Only one specimen among weed, Paignton, low tide.

U. HYALINUS.

Rare; living. Two specimens among weed, low tide, Paignton.

U. TRUNCATULUS.

Common; living. Very abundant among weeds at low tide.

ACTÆON TORNATILIS.

Very rare; dead. Only one badly-worn shell was found of this common species thrown up on Goodrington Sands.

BULLA HYDATIS.

Not uncommon; alive. At some seasons scarce, at others plentiful, off Elbury.

SCAPHANDER LIGNARIUS.

Common; living. In the trawls; occasionally thrown up dead on shore.

PHILINE CATENA.

Rare; dead. In shell sand, Goodrington, and Tor Abbey Sands.

P. PUNCTATA.

Rare; dead. In shell sand, Goodrington, and Tor Abbey Sands.

P. APERTA.

Common; living. Of very large size; thrown up after storms in great abundance on Paignton Sands.

Fam., APLYSIIDÆ.

APLYSIA PUNCTATA.

Common; living. Dredged off Brixham and Elbury.

Fam., PLEUROBRANCHIDÆ.

PLEUROBRANCHUS MEMBRANACEUS.

Occasional winter visitors, coming in large numbers, and again disappearing. (A. R. Hunt.)

MELAMPUS BIDENTATUS.

Rare; dead. Thrown up on Goodrington and Tor Abbey Sands.

M. MYOSOTIS.

Rare; dead. Thrown up on Paignton Sands.

Total Gasteropoda 121

LIST OF MEMBERS.

* Indicates Life Members.

+ Indicates Honorary Members.

‡ Indicates Corresponding Members.

Notice of changes of Residence and of Decease of Members should be sent to the
Honorary Secretary, Rev. W. Harpley, Clayhanger Rectory, Tiverton.

Year of
Election.

- 1872†Adams, John Couch, M.A., D.C.L., F.R.S., F.R.A.S., Director of
Observatory and Lowndean Professor of Astronomy and
Geometry in the University of Cambridge, The Obser-
vatory, Cambridge.
- 1875 Adams, George, Buckyett, Little Hempston, Totnes.
- 1875 Adams, John, South Street, Torrington.
- 1874 Alsop, R., Teignmouth Bank, Teignmouth.
- 1869 Amery, J. S., Druid, Ashburton.
- 1869 Amery, P. F. S., Druid, Ashburton.
- 1872 Amery, Sparke, Druid, Ashburton.
- 1875 Andrew, T., F.G.S., Southernhay, Exeter.
- 1863 Appleton, Edward, F.I.B.A., Cotswold, Torquay.
- 1870 Arnold, G., Dolton.
- 1868 Ash, F., Dartmouth.
- 1868 Ashley, J., Honiton.
- 1875 Ashplant, W., High Street, Torrington.
- 1874 Ayerst, J.S.A., M.D., 2, Belgrave Terrace, Torquay.
- 1871 Bangham, Joseph, Torrington.
- 1862 Barnes, Rev. Preb., M.A., The Vicarage, Heavitree, Exeter.
- 1862 Bate, C. Spence, F.R.S., &c., 8, Mulgrave Place, Plymouth.
- 1872 Bate, James J. R., Bampton Street, Tiverton.
- 1873 Batten, J. Hallet, F.R.G.S., M.R.A.S., 2, Manston Terrace,
Exeter.
- 1866 Bayly, John, Seven Trees, Plymouth.
- 1866*Bayly, Richard, Seven Trees, Plymouth.
- 1871*Bayly, Robert, 3, Bedford Terrace, Plymouth.
- 1868 Bayley, W. R., M.A., Cotford House, Sidbury, Sidmouth.
- 1874 Beatty, J., B.A., 6, Laira Terrace, Plymouth.
- 1873 Beer, William, Albany Place, Plymouth.

- 1873 Berry, W. F., Axminster.
 1868 Bidder, George P., c.e., Ravensbury, Dartmouth.
 1865 Blackmore, Humphrey, Garston, Torquay.
 1873 Blake, C. Paget, m.d., Anglesey House, Torquay.
 1872 Borlase, W. C., f.g.s., Castle Horneck, Penzance.
 1874 Bowring, Lady, 7, Baring Crescent, Exeter.
 1873 Bowring, L. B., c.s.l., Lavrockbeare, Torquay.
 1869 Brendon, William, George Street, Plymouth.
 1873 Brent, F., 19, Clarendon Place, Plymouth.
 1874 Brewin, R., Bearsden, Ide, Exeter.
 1873 Bridges, W. T., d.c.l., Torwood, Torquay.
 1875 Brierley, Rev. J., Castle Street, Torrington.
 1870 Briggs, T. R. A., 4, Portland Villas, Plymouth.
 1872 Brodrick, W., Littlehill, Chudleigh.
 1873*Brown, Mrs., 1, Stratton Street, Piccadilly, London.
 1872 Buckingham, W., 12, Southernhay, Exeter.
 1875 Buckland, Rev. S., m.a., Torrington.
 1868 Buller, W. W., Becky Fall, Manaton, Moretonhampstead.
 1874 Bulteel, C., f.r.c.s., Durnford Street, Stonehouse.
 1871 Burch, Arthur, 5, Baring Crescent, Exeter.
 1873*Burdett-Coutts, Right Hon. Baroness, 1, Stratton Street, Piccadilly, London.

 1862 Cann, William, f.r.h.s., 9, Southernhay, Exeter.
 1874 Carew, W. H. Pole, Antony, Torpoint.
 1866*Carpenter-Garnier, J., m.p., Mount Tavy, Tavistock.
 1870 Carslake, J. B. H., Bridgewater.
 1873*Cave, Right Hon. S., m.p., Witheby, Sidmouth.
 1864 Cawdle, W., 26, Union Street, Torquay.
 1866 Champernowne, A., m.a., f.g.s., Dartington House, Totnes.
 1866 Chanter, J. R., Fort Hill, Barnstaple.
 1875 Chapple, N., Well Street, Torrington.
 1871 Charlewood, Admiral E. P., r.n., Northam, Bideford.
 1873 Chick, S., Sidmouth.
 1873 Chick, S., junr., 5, Newman Street, London. W.
 1869*Clark, R. A., Wentworth, Torquay.
 1875 Clarke, Henry, Torrington.
 1871 Clements, Rev. H. G. J., m.a., Vicarage, Sidmouth.
 1873 Clifford, Col. Morgan, St. Ronan's, Torquay.
 1873 Clifford, Right Hon. Lord, Ugbrooke, Chudleigh.
 1875 Clinton, Right Hon. Lord, Heanton Satchville, Beaford.
 1870 Close, Rev. R., Grosvenor Villa, 204, Burrage Road, Plumstead, London. S.E.
 1875 Cocks, J. W., Madeira Place, Torquay.
 1874 Coffin, J. R. Pine, Portledge, Bideford.
 1870 Coffin, T., 6, Beaufort Terrace, Lillie Bridge, Fulham.
 1868 Coleridge, Rt. Hon. Sir J. T., LL.D., Heath's Court, Ottery St. Mary.

- 1868*Coleridge, Right Hon. Lord, M.A., 6, Southwick Crescent, London.
- 1873 Coleridge, W. R., Salston, Ottery St. Mary.
- 1872 Colby, Rev. F. T., B.D., F.S.A., Little Cheney Rectory, Dorchester.
- 1875 Colby, Rev. E. R., M.A., 7, Geneva Cottages, Torquay.
- 1866 Collier, W. F., Wood Town, Horrabridge.
- 1871 Cook, Rev. Precentor, M.A., The Close, Exeter.
- 1867 Cotton, R. W., Barnstaple.
- 1866 Cotton, W., F.S.A., Elms House, Alphington Road, Exeter.
- 1870 Crabbe, William Richard, F.S.A., East Wonford, Heavitree, Exeter.
- 1866 Creed, J., Whiddon, Newton Abbot.
- 1875 David, Rev. W., Colleton Crescent, Exeter.
- 1875 Davidson, J. B., 4, Old Buildings, Lincoln's Inn, London.
- 1871 Davis, Rev. S., Burrington, Chumleigh.
- 1871 Deane, W. A., Webbery, Bideford.
- 1870 De Larue, P. F., M.R.C.S., 40, Ker Street, Devonport.
- 1873 Devon, Right Hon. the Earl of, Powderham Castle, Exeter.
- 1862 Divett, John, M.A., Bovey Tracey.
- 1875 Doe, C., South Street, Torrington.
- 1867 Doe, G., Castle Street, Great Torrington.
- 1875 Doe, G. M., Castle Street, Torrington.
- 1875 Doidge, Samuel, South Street, Torrington.
- 1869*Douglas, Rev. R., M.A., Manaton, Moretonhampstead.
- 1873*Dowie, J. M., Wetstones, West Kirby, Birkenhead.
- 1874 Dunn, E. C., Melbourne, Australia.
- 1873 Dunn, R. Marsh, Carlton Lodge, Teignmouth.
- 1866 Durant, R. Sharpham, Totnes.
- 1871 Dymond, F. W., 3, Manston Terrace, Exeter.
- 1872 Dymond, R., F.S.A., Bampfylde House, Exeter.
- 1874*Edgecumbe, Right Hon. Earl of, Mt. Edgecumbe, Plymouth.
- 1874 Edwards, H. J., M.R.O.S., Rosenville, Teignmouth.
- 1873 Ellacombe, Rev. H. T., F.S.A., M.A., Clyst St. George.
- 1862 Ellis, H. S., F.R.A.S., 1, Fair Park, Exeter.
- 1869*Evans, J., V.P.R.S., F.S.A., Pres. G.S., Nash Mills, Hemel Hempsted, Herts.
- 1871*Exeter, Right Rev. the Lord Bishop of, the Palace, Exeter.
- 1872 Falkner, Rev. Thomas Felton, B.A., F.S.A., F.M.S., St. Thomas's College, Colombo. (Care of J. E. Price, Esq., F.S.A., 53, Beresford Road, Highbury New Park, London. N.)
- 1869 Farley, H. W., C.E., 3, Belmont Villas, Newton Abbot.
- 1875 Farleigh, J. S., South Street, Torrington.
- 1864 Finch, T., F.R.A.S., M.D., Westville, St. Mary Church, Torquay.
- 1875 Firth, F. H., Cator Court, Ashburton.

1874 Fisher, Edward, The Shrubbery, Overseale, Ashby de la Zouch.
 1875 Fisher, T., Buckland Filleigh, Highampton.
 1875 Fisher, G., High Street, Torrington.
 1875 Fletcher, J. L., Halsdon Terrace, Torrington.
 1867 Fortescue, Right Hon. Earl, Castle Hill, Southmolton.
 1867 Foster, Rev. J. P., M.A., Dartmouth.
 1875 Fowler, C., Villa Mentone, Torre, Torquay.
 1875 Fowler, Rev. Hugh, M.A., Barnwood Vicarage, Gloucestershire.
 1863 Fox, S. B., 7, Southernhay, Exeter.
 1874†Froude, J. A., M.A., 5, Onslow Gardens, London.
 1868 Froude, W., M.A., F.R.S., M.I.C.E., Chelston Cross, Torquay.
 1872 Fursdon, Rev. E., Fursdon, Tiverton.

1875 Gadd, Henry, Branscombe House, Exeter.
 1862 Gamlen, W. H., Brampford Speke, Exeter.
 1872 Galton, J. C., 6, Dix's Field, Exeter.
 1872*Geare, J. G., Exeter.
 1871*Gervis, W. S., M.D., Ashburton.
 1872 Gidley, Bartholomew C., M.A., 2, Barnfield Crescent, Exeter.
 1865 Gill, H. S., Exe Villa, Tiverton.
 1874 Gilman, E. J., 14, Boltons, London. S.W.
 1875 Glubb, P. B., Potacre Street, Torrington.
 1868*Goldsmid, J., M.A., M.P., 49, Grosvenor Street, London. W.
 1868 Gordon, C., M.A., Wiscombe Park, Honiton.
 1868 Grainger, Rev. G. Watts, M.A., Luppit Vicarage, Honiton.
 1875 Grant, Henry, Well Street, Torrington.
 1875 Gregory, Rev. J. R., Torrington.
 1873 Grundy, T., Beetlands, Sidmouth.
 1875 Guille, Rev. G. de Carteret, Rectory, Little Torrington.
 1874 Gulson, J. R., East Cliff, Teignmouth.
 1873*Guyer, J. B., President Torquay Natural History Society,
 1, Lisburne Cottages, Torquay.

1870 Haddy, Rev. J. P., 8, Home Park, Stoke, Devonport.
 1867*Hall, Townsend M., F.G.S., Pilton, Barnstaple.
 1873 Hall, J. Sparkes, 308, Regent Street, London.
 1873*Halliday, W. H., M.A., Glenthorn, Lynmouth, Barnstaple.
 1862 Hamilton, A. H. A., M.A., President of the Exeter Naturalists'
 Club, Fairfield Lodge, Exeter.
 1873*Hanbury, S., Bishopstowe, Torquay.
 1875 Handford, E., High Street, Torrington.
 1870 Harding, Col., Upcot House, Pilton, Barnstaple.
 1868 Harper, J., L.R.C.P., Bear Street, Barnstaple.
 1874 Harpley, R. B., Greatham, West Hartlepool.
 1862 Harpley, Rev. W., M.A., F.C.P.S. (GENERAL SECRETARY), Clay-
 hanger Rectory, Tiverton.
 1873*Harvey, J. T., 8, Wellswood Park, Torquay.
 1875 Hatt-Cook, Herbert, Hertford Hall, Cheshire.

- 1875 Haverfield, T. W., South Street, Torrington.
 1875 Haverfield, Major, 26, Alma Square, St. John's Wood, London.
 1869 Hawker, Rev. Treasurer, M.A. (PRESIDENT ELECT), Ide Vicarage, Exeter.
 1869 Hayne, C. Seale, Kingswear, Castle, Dartmouth.
 1872 Hayward, P., Cathedral Yard, Exeter.
 1862 Header, G. E., Torwood Street, Torquay.
 1862 Header, J. N., PH.D., Princess Square, Plymouth.
 1865 Header, W., Rocombe, Torquay.
 1868*Heberden, Rev. W., M.A., Broadhembury Vicarage, Honiton.
 1875 Hedgeland, Rev. Preb., M.A., Penzance.
 1871 Heineken, N. S., Sidmouth.
 1875 Highton, Rev. E., M.A., Bampton Street, Tiverton.
 1875 Higman, Rev. W., Torrington.
 1872 Hill, J., J.P., Moretonhampstead, Exeter.
 1862 Hine, J. E., F.I.B.A., 7, Mulgrave Place, Plymouth.
 1869 Hingston, R., Dartmouth.
 1875 Hockin, Edward, Poughill, Stratton, Cornwall.
 1873 Hodge, B. T., M.D., High Street, Sidmouth.
 1867 Hodgson, W. B., Professor, LL.D., Bonaly Tower, Colinton, Scotland.
 1875 Holwill, Frederick, South Street, Torrington.
 1873 Hooker, R. H., Lea Hurst, Torquay.
 1873 Hooper, B., Bournbrook, Torquay.
 1867 Hore, Rev. W. S., M.A., Penrose Villas, Barnstaple.
 1862 Horne, T. B., M.R.C.S., Adwell, Torquay.
 1873 Horniman, W. H., Merton Lodge, Lincombe Road Middle, Torquay.
 1871 Hounsell, H. S., M.D., The Larches, Torquay.
 1871 How, John, Bideford.
 1872 Hughes, Major-General W. T., C.B., Strete Raleigh, Whimble, Exeter.
 1868*Hunt, A.R., M.A., F.G.S., Southwood, Warberry Road Middle, Torquay.
 1873 Hutchins, Rev. H., M.A., The Clintons, Teignmouth.
 1868 Hutchinson, P. O., Sidmouth.
 1869 Inskip, Rev. R. M., M.A., R.N., C.B., 57, Cobourg Street, Plymouth.
 1875 Jackson, J., junr., Torre Villa, Torrington.
 1875 Jackson, Thomas, Castle Street, Torrington.
 1875 Johnson, J. G., M.P., Cross, Torrington.
 1875 Johnson, W. J., Little Silver, Torrington.
 1875 Jones, C. K., M.D., M.R.C.S., Castle House, Torrington.
 1862 Jones, Winslow, St. Loyes, Heavitree, Exeter.
 1871 Jordan, W. R. H., Bitton Street, Teignmouth.

- 1874 Karkeek, P. Q., 1, Matlock Terrace, Torquay.
 1862 Kendall, W., J.P., 6, Higher Summerlands, Exeter.
 1872 Kennaway, Sir John H., Bart., M.A., M.P., Escot, Ottery St. Mary.
 1874 King, Richard, J. (PRESIDENT), The Limes, Crediton.
 1868 Kingdon, A. S., M.D., Combmartin, Ilfracombe.
 1875 Kingdon, J. B., Mill Street, Torrington.
 1871 Kitchen, Rev. J. L., M.A., Exeter.
 1865 Kitson, W. H., Hemsworth, Barton Road, Tor, Torquay.

 1869*Laidley, Rev. W., M.A., West Lawn, Teignmouth.
 1871 Lake, W. C., M.D., 2, West Cliff Terrace, Teignmouth.
 1873 Lavers, W., Upton Leigh, Torre, Torquay.
 1871 Lee, Godfrey Robert, Fore Street, Teignmouth.
 1872 Lee, J. E., F.G.S., F.S.A., Villa Syracuse, Torquay.
 1873 Lethaby, R., Market Place, Sidmouth.
 1870 Lewis, J. D., Membland Hall, Ivybridge.
 1872 Linford, W., Elstow, Old Tiverton Road, Exeter.
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 1873 Lister, C., Bournemouth, Dorset.
 1872 Lloyd, Horace G., 9, Baring Place, Mount Radford, Exeter.
 1873 Loveband, M. R., Torrington.
 1869 Luttrell, G. F., Dunster Castle, Somerset.
 1863*Lyte, F. Maxwell, Berry Head House, Brixham.

 1874 Macartney, Rev. S. P., Vicarage, Chudleigh.
 1875 Macartney, Captain, South Street, Torrington.
 1865 Mackenzie, F., M.R.C.S., Tiverton.
 1875 Mallet, H. L., High Street, Torrington.
 1873 Marshal, Rev. J. H., Salcombe Regis.
 1871 Marshall, W. J., 12, Cornwall Street, Plymouth.
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 1872 Mellish, E., The Lodge, Buckrell, Honiton.
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 1873 Mogridge, Robert Palk, Bampton, Tiverton.
 1870 Moore, A., H.M. Dockyard, Devonport.
 1862 Moore, W. F., The Friary, Plymouth.
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 1873 Nuthall, Major General, Dawlish.

- 1874*Oldham, T., LL.D., M.A., F.R.S., F.G.S., M.R.I.A., Director of the Geological Survey of India, Calcutta. (Care of Messrs. Trübner and Co., Ludgate Hill, London.)
- 1872 Oliver, Capt., R.A., F.R.G.S., Citadel, Plymouth.
- 1862 Ormerod, G. W., M.A., F.G.S., Brookbank, Teignmouth.
- 1872 Oxland, Rev. W., B.A., 10, South Devon Place, Plymouth.
- 1873 Paige-Brown, J. B., M.A., Great Englebourne, Harberton, South Devon.
- 1862 Palk, Sir Lawrence, Bart., M.P., Haldon House, Torquay.
- 1875 Palmer, Rev. C. E., M.A., Torrington.
- 1869*Pannell, C., F.G.S., Walton Lodge, Torquay.
- 1862 Parfitt, Edward, Devon and Exeter Institution, Exeter.
- 1873 Parker, C. E., 13, Scarborough Terrace, Torquay.
- 1867 Parry, J. A., Bideford.
- 1875 Pattinson, H. B., M.R.C.S., Halsdon Terrace, Torrington.
- 1871 Paty, G. P. H., M.A., Bideford.
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- 1875 Pearce, J., Torrington.
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- 1872*Peek, Sir H. W., Bart., M.P., Rousdon, Lyme, Dorset.
- 1875 Pelham, Hon. and Rev. F. G., Upton Pyne, Exeter.
- 1862 Pengelly, W., F.R.S., F.G.S., &c., Lamorna, Torquay.
- 1873 Pershouse, F., junr., Ellerton, Torre Park, Torquay.
- 1875 Pettie, R., Morton Villa, Torrington.
- 1864 Phillips, J., Devon Square, Newton Abbot.
- 1867 Pick, Joseph Peyton, Braunton, Barnstaple.
- 1875 Pidgeon, H. H., South Street, Torrington.
- 1862 Pollard, W., M.R.C.S., Southland House, Torquay.
- 1868 Porter, W., M.A., Hembury Fort, Honiton.
- 1874 Price, W. E., South Street, Torrington.
- 1874 Proctor, W., Elmhurst, Torquay.
- 1867 Prowse, A. P., Mannamead, Plymouth.
- 1862 Pycroft, G., M.R.C.S., F.G.S., Kenton, Exeter.
- 1871 Pyke, W., Longfield, Bideford.
- 1873 Raby, S., Honsham, Kent's Road, Torquay.
- 1869*Radford, I. C., 56, Fore Street, Devonport.
- 1868*Radford, W. T., M.B., F.R.A.S., Sidmount, Sidmouth.
- 1873 Ramsay, H., M.D., Duncan House, Torquay.
- 1873*Rathbone, T., M.A., Backwood, Neston, Cheshire.
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- 1874 Remfry, G. F., Firsleigh, Torquay.
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- 1870 Riddell, Major-General, C.B., R.A., Oaklands, Chudleigh.

- 1869 Ridgway, Lieut.-Col., 2, Waterloo Place, Pall Mall, London.
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 1871 Robin, John, Bishopsteignton, Teignmouth.
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 1875 Rolle, Honble. Mark, Stevenstone, Torrington.
 1870 Rolston, J., M.D., Clarendon Villa, Stoke, Devonport.
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 1865 Row, W. N., Cove, Tiverton.
 1862 Rowe, J. Brooking, F.L.S., Lockyer Street, Plymouth.
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 1874 Schuster, Herbert L., Belton Lodge, Torquay.
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 1875 Scott, Captain, Smytham, Little Torrington.
 1871 Seymour, Rev. G. T., M.A., Warberry Court, Torquay.
 1862 Shute, R., Baring Crescent, Exeter.
 1868 Sidmouth, Right Hon. Viscount, Upottery Manor, Honiton.
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 1875 Slee, H., High Street, Torrington.
 1874 Smith, E., F.C.S., Strand, Torquay.
 1873*Sole, Major W. H., Hareston, Torquay.
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 1868 Stebbing, Rev. T. R. R., M.A., Tor Crest Hall, Torquay.
 1875 Stevens, J. C. Moore, Winscott, Peter's Marland, Torrington.
 1875 Strangways, H. Fox, Silverton Rectory, Cullompton.
 1869 Studdy, H., Waddeton Court, Brixham.
 1870 Swann, Capt. J. S., F.G.S., F.S.A., Holyshute, Honiton.
 1873 Symonds, J. L., Hinton Manor, Faringdon, Berks.
 1875 Tapley, R. L., Torrington.
 1864*Tetley, J., M.D., Belmont, Torre, Torquay.
 1872 Thomas, J. L., New Hayes, St. Thomas, Exeter.
 1875 Thompson, Col., Broomfield Manor, Exbourne, North Devon.

- 1873 Thomson, Spencer, M.D., Ashton, Torquay.
 1868 Thornton, Rev. J. H., B.A., President Teign Naturalists' Club,
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 1873*Thornton, R. N., Knowle, Sidmouth.
 1873 Torr, J. S., 11, Ladbroke Gardens, Kensington Park, London. W.
 1869 Tothill, W., Stoke Bishop, Bristol.
 1872 Tozer, Henry, Ashburton.
 1874 Tozer, J. H., Glendaragh, Teignmouth.
 1871 Trevelyan, Sir Walter C., Bart., M.A., F.G.S., Wallington,
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 1872 Tucker, C., F.S.A., Marlands, Exeter.
 1865 Turnbull, A., Parkwood, Torquay.
 1872 Turnbull, Lieut.-Col. J. R., The Priory, Torquay.

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 1872 Varwell, P., Alphington Street, St. Thomas, Exeter.
 1862*Vicary, W., F.G.S., The Priory, Colleton Crescent, Exeter.
 1862 Vivian, E., M.A., F.M.S. (GENERAL TREASURER), Woodfield,
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 1864 Vivian, R. H. D., Woodfield, Torquay.

 1864 Weeks, C., 83, Union Street, Torquay.
 1870*Were, T. K., M.A., Cotlands, Sidmouth.
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 1871 Whiteway, J. H., Brookfield, Teignmouth.
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 1872 Wilkinson, R. C., Bradninch House, Exeter.
 1871 Willett, Capt. J. S., Monkleigh, Torrington.
 1871 Wills, Joseph, West Quarter, Exeter.
 1875 Wiltshire, Rev. T., M.A., F.G.S., F.L.S., F.R.A.S., Hon. Sec.
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 1872 Windeatt, T. W., Totnes.
 1875 Windeatt, Edward, Totnes.
 1872*Winwood, Rev. H. H., M.A., F.G.S., 11, Cavendish Crescent,
 Bath.
 1872 Worth, R. N., 3, Patna Place, Plymouth.
 1870 Wren, A. B., Lenwood, Bideford.

The following Table shows the progress and present state of the Association with respect to the number of Members.

	Honorary.	Corresponding.	Life.	Annual.	Total.
July 29th, 1874 ..	3	2	40	282	327
Since elected ....	..	..	4	72	76
Since deceased	1	8	9
Since withdrawn	34	34
Since erased	4	4
July 27th, 1875 ..	2	2	44	308	356

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LIST OF CORRECTIONS REQUIRED IN "TRANSACTIONS DEVONSHIRE ASSOCIATION," VOL. VII

Page	63	line	7	for	"Bideford"	read	"Devonport."
"	106	"	18	"	"has"	"	"have."
"	109	"	24, 29	"	"Torre"	"	"Taw."
"	113	"	36	"	"Charlsworth"	"	"Charlesworth."
"	114	"	16	"	<i>Acanthopterygian</i>	"	<i>Acanthopterygian.</i>
"	162	"	7	"	"Austin"	"	"Austen."
"	163	"	24, 30	"	"whorled"	"	"whirled."
"	164	"	5	"	"cataclisms"	"	"cataclysms."
"	166	"	1, 38	"	"Austin"	"	"Austen."
"	166	"	12	"	"Austin"	"	"Austen."
"	168	"	16, 30	"	"Austin"	"	"Austen."
"	243	"	2	"	"Cany"	"	"Cary."
"	275	"	43	"	"reporded"	"	"recorded."
"	277	"	26	"	"bnt"	"	"but."
"	296	"	29	"	"domes"	"	"dunes."
"	303	"	21	cancel	"deposit."		
"	317	"	41	for	"Prestwick's"	read	"Prestwich's."
"	327	"	21	"	"Austin"	"	"Austen."

Insert an asterisk after each of the following words:—FRENCH-NUTS and FURZE-CHAT, p. 422; GALLIED, GOLDEN GLADDY, and HAMWARDS, p. 423; LONG-TAILED-PIE, MAURA, MELL, and MOOSTER, p. 426; ORTS and PICKING BARS, p. 427; SCUD, p. 429; SKIVER and STEWER, p. 430; and VAGA, p. 432.

Page	425	Cancel the asterisk after	HOMER-LONG-ORIPPLE.
"	470	line	2 for "he" read "the."
"	549	"	16 "lett" "let."
"	561	"	12 after "vitty?" insert "Lock."
"	596	"	46 for "Hertford" read "Hartford."

RESOLUTIONS PASSED AT THE WINTER MEETING
OF THE COUNCIL, FEBRUARY, 1876.

1. That the next Annual Meeting of the Association commence on **TUESDAY, JULY 25th, 1876.**

2. That the following be a Standing Order: "The Author of every Paper which the Council at any Annual Meeting shall decide to print in the Transactions shall be expected to pay for all such illustrations as in his judgment the said Paper may require; but the Council may, at their discretion, vote towards the expense of such illustrations any sum not exceeding the Balance in hand as shewn by the Treasurer's Report to the said Meeting, after deducting all Life Compositions, as well as all Annual Contributions received in advance of the year to which the said Report relates, which may be included in the said Balance."

3. That the words "must strictly relate to Devonshire, and," be inserted in the 9th of the *Bye-Laws and Standing Orders* immediately before the words "must be handed."

4. That **Mr. R. J. KING, Mr. G. PYCROFT, Mr. R. DYMOND, and Mr. R. N. WORTH**, be a Committee to prepare a Report on the Public and Private Collections of Works of Art in Devonshire, and that **Mr. KING** be the Secretary.

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